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ORIGINAL ARTICLES.

REPORT OF THE COMMITTEE ON SCHOOL HYGIENE.

Presented to the Section on State Medicine, at the Forty-fourth Annual Meeting of the American Medical Association.

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Upon the formation of the Committee it was thought best to divide the work among the members, assigning a separate department to each. It has been found in practice, however, that the ground has not been fairly covered by this plan. Long and careful special papers have been prepared and published by some of the members, while others, though deeply interested in the work, have not found time to treat their assigned subjects in a manner which would justify them in publishing results. It has, therefore, seemed best to the Chairman of the Committee to take the responsibility of drawing up a brief but comprehensive statement of principles, covering all the topics; submitting the whole to each member, and presenting the matter to the Section of State Medicine.

It seems desirable in doing this, to avoid statements which are open to reasonable doubt. It is thought that the most useful result can be gained by a simple untechnical presentation of facts omitting discussions, statistics and arguments; with the object of securing the attention of school authorities, teachers, builders, and others interested in education.

A—SITE, DRAINAGE AND SEWERAGE OF SCHOOL BUILDINGS.

1. Good Light.—This point has been seriously neglected in many city sites, for financial reasons. The neglect to secure good light has been demonstrated to be an important cause of near-sight in scholars. The desired object can be attained by reserving a tolerably wide strip of land around the school building at the outset, and by municipal regulations restricting the height of neighboring structures. It is suggested that the height of such buildings around schoolhouses should not exceed one-half the distance between them and the schoolhouse; or, that the line drawn from the foot of the school house wall to the upper part of the other house should not form an angle with the horizon exceeding 30 degrees. In small towns the space for play grounds should be much greater—at least a half acre.

2. Sunlight.—If possible, the sun should enter every room in the house at some time in the day, but chiefly out of school hours. The play grounds should be placed, if it can be so arranged, on the sunny side of the house. There should be no trees overshadowing the house, since this causes dampness.

3. Neighborhood.—Disturbing influences, as the presence of large bodies of working people, railroads, noisy streets, engine houses, are injurious for various reasons, partly as furnishing undesirable outside associations. Immorality or filth should not be suggested in the surrounding neighborhood. A main city street is commonly to be avoided. The vicinity of offensive trades, as tanneries, rendering establishments, refineries and gas works, is to be avoided.

4. Soil.—A damp soil is of itself a serious objection to a site. The case is worse if the site be low, with poor natural drainage and poor opportunity for artificial relief. If it be necessary to build on a springy piece of ground, a trench must be dug around the foundation to a depth below the cellar floor, and far enough from the building to insure the safety of the walls; in this, drain tile with loose joints is laid, discharging away from the building at some lower point. It is useless to cement the cellar wall or floor for the purpose of excluding water, but cement or asphalt forms a good protection against dampness.

School yards in towns should be so paved (not graveled), and underdrained if necessary, as to become dry within an hour after a rain. Dry walks should lead to the out-buildings.

5. Out-buildings.—If privies are employed, they should never be within fifty feet of the main building. They should be separate for the sexes, with entirely separate paths of access, and having a board fence between. Dry earth or sifted ashes should be sprinkled over the contents once a day. The entire contents should be removed once a fortnight. The receptacle must be so constructed that such removal can be effected easily and completely; or it should itself be removable with its contents. An iron trough on wheels, or a metal pail is suggested.

Urinals must not be made of iron, and they had better not be made of any metal. Impervious material, such as glass or oiled slate, is best. Cement is very objectionable from its porosity. Joints between slabs should be perfectly tight.

6. Water-closets—When a supply of water is at hand, water closets are the best arrangement. They may either be single, or may consist of long troughs corresponding to a number of seats. The pan closet is undesirable, since its inner parts are not freely cleansed by the flow of water. Of the simpler forms of closet, all those which do not furnish a quick and free discharge of water, cleansing the bowl thoroughly and removing all the contents within a few seconds, are to be absolutely rejected. A noisy apparatus is exceedingly objectionable for closets which are placed (e. g. for teachers' use) in the vicinity of schoolrooms; the noise may proceed either from the tank or the basin.

One of the simplest forms of apparatus for schools is the long tank of cement or iron placed under the

range of seats. The bottom is covered with a few inches of water, and slopes to an outlet so that by raising a plug the whole contents are quickly discharged into the sewer, after which cleansing is easily effected by a hose and broom. The addition of an automatic flushing apparatus acting spontaneously at fixed intervals has been found desirable.

All closets and urinals in a schoolhouse must have special ventilation by forced draught. No mechanical contrivances or disinfectors do away with the necessity of personal inspection and faithful cleansing by hand.

7. Plumbing.—The principles of drainage and sewerage, commonly termed the art of plumbing, are the same for school buildings as for other edifices. It may be stated, that pipes and other fixtures ought to be so placed that they can be *seen* by lifting movable boards, without having recourse to a carpenter, or mason, or plumber to disclose their intricacies.

It should further be understood, that the whole system is under the control and supervision of some responsible and intelligent person, who possesses sufficient plans and drawings of the system, and pays frequent attention to its condition.

B—CONSTRUCTION.

1. Safety.—The chief danger is found in old buildings, and in those not originally intended for their present use. In such, we occasionally find conditions which are nearly sure to cause accidents in case of a panic. The staircase is the important point. It must be very strong, wide and easy; not steep, not sharp-angled, not spiral or with wedge-shaped steps; it should have a platform at the turn. It is safer without a well; if balusters are used they must be high. In large buildings a staircase should be placed at each end. Halls and outer doors must be wide, and all doors open outward. Fire-escapes on the outside are at best an undesirable refuge, and in the ordinary forms may be very dangerous to a crowd of frightened children. Discipline and practice in "fire-drill" or quick orderly march from the school, are by far the best safeguards.

2. The Schoolroom.—The size of a class room should be governed by the number of pupils it is intended for. If we assume that 50 can be attended to by the teacher, and that 200 cubic feet of space is allowed per head, a room 24x33x12½ will answer well. The oblong shape is desirable. If the dimensions here given are exceeded in length, there will be difficulty on the teacher's part in supervision and on the scholars' part in seeing what the teacher may show or write on the board. A greater depth or distance from the windows than twenty-four feet will impair the lighting.

3. Illumination.—The lighting of a room for school work requires a much larger allowance of window space than is needed for dwellings. The windows must be square-headed, and brought very near the ceiling; there must be no projections (cornices, piazzas, Italian shades) to interfere with the free entrance of light. The total amount of window glass on a liberal allowance may equal one-fifth the floor space; if fully exposed to the sky, less will suffice. Roller shades are of most use when the roller is placed at the foot of the window. Light coming wholly from one side (viz., the left hand) if sufficient in amount, is the best for the eyes; if this plan in any case appears likely to give insufficient lighting, owing to local conditions, windows may be added at the back, possibly also at the right (but in the latter case, at a very high level). Windows in front of the pupils are very injurious to the sight. The wall should be colored of a neutral tint, or with a faint shade of blue or green if liked. The ceiling should be white. It must have no cross beams placed transversely to the light. Blackboards must not be placed between windows.

4. Miscellaneous.—The size of recitation rooms must be planned upon the same principle as that of schoolrooms, viz., that of allowing 200 cubic feet per scholar.

It is desirable, where possible, to limit the height of a building to two stories above the street, inasmuch as injury not infrequently results from the excessive strain of climbing upstairs.

Accommodations for hanging clothes should be furnished outside of class rooms, with good provision for ventilation. Enclosed spaces in the halls, open at top and bottom, are suitable.

Cellars or basements must be high, dry, well-lighted and thoroughly wholesome. If there is no cellar, there must be a dry sub-floor space under the whole building.

Dust being a destroyer of pure air and a foe to health, care must be taken to avoid for floors such material as produces dust; if of cement, it must not crumble; if of wood, it must be "filled" so as to be impervious.

C—VENTILATION AND HEATING.

A very large proportion of schools are so poorly provided with ventilating arrangements that they are practically dependent on open windows. To relieve this unfortunate state of things, the lower sash may be raised two inches (less, in stormy weather) and a board placed in front to deflect the air upward. The upper sash (which ought always to be movable) may be lowered an inch. These measures are attended with little risk, and give perceptible, though partial, relief.

Perforations in the sash, window pane, or wall, also give some relief. Such methods may provide sufficient air for five or six persons in a room, but are entirely inadequate for the supply of a whole class.

The attempt to ventilate schoolrooms in cold weather by the windows, in the Northern United States is either very dangerous to health or very ineffective, or both. The amount which can safely be admitted in this way may be one-fifth to one-tenth of what is needed. The existence of ventilating flues or openings does not of itself insure good ventilation. Flues may be too small, or crooked, or partly or wholly stopped up; they may discharge into other rooms or the attic instead of the outer air; they may be unprovided with means for causing the air to rise in them; they may be in many ways badly planned. To enumerate the faults which may be committed would require a treatise.

It ought to be understood by every one concerned in ventilation that large collections of persons require very large amounts of air; that the amount should be calculated, and the size of the flues determined before the house is planned; that true economy requires us to consider the system of heating and that of ventilation as inter-dependent parts of

one and the same problem; and that both should form a part of the original architectural design.

The amount of fresh air to be brought into the building for each pupil should be 2,000 cubic feet per hour for younger children (under 10) and 3,000 for high school pupils. These amounts are calculated from the assumptions that the external "pure" air contains an average of 4 parts of CO_2 in 10,000; and that when the CO_2 has increased under the influence of respiration, to the amount of more than 6 in 10,000, the air may be considered "impure." Dilution, to the extent mentioned above, will keep the air of the room below the point of "impurity," here assumed. The purity required by this standard is such that persons coming fresh from out of doors will not perceive any distinct closeness in the air of the schoolroom.

As regards the relative requirements at different ages, it may be assumed as proportionate to the different amounts of CO_2 exhaled by people of different ages. In the case of children of 8 years, it is about two-thirds as much as in young persons of 15.

If a lower standard of supply is taken (say 1000–1500 c. f. per hour), there will be a perceptible deficiency of purity, which will have to be made up by an hourly opening of the windows on the occasion of recess.

If the cubic contents of a schoolroom equal 200 c. f. per head, the entire air contents of the room will thus be renewed every four to six minutes. It is found by experience that the draught caused by the in-rushing air need not be troublesome in rooms which allow this amount of space per inmate. It is recommended that this be the average allowance of space.

In testing air for CO_2, it is important to take samples from the level of the pupils' heads, avoiding the admixture of the breath. If the condition of the air at that level is satisfactory, the end of ventilation has been gained.

The rapidity with which the air leaves the room may be ascertained by the use of the anemometer. In addition to this test it is desirable to apply the chemical test for comparing the discharged air with that of different parts of the room; for if the supply of fresh air is badly distributed, it may happen that in some parts of the room the currents are comparatively stagnant, and the air will grow more impure than the average of the room.

The animal impurities of the expired air (exclusive of CO_2) are probably, in part, of a poisonous nature. They, perhaps, include ptomaines as results of putrefactive decomposition. They are of infinitely more importance than the CO_2 which is associated with them; but they can not be conveniently made the subjects of quantitative test. Hence, the CO_2 test is employed, as indicating with *probability* how much the air has been affected by respiration.

The mere removal of foul air, whether by stoves, fireplaces, or ventilating flues, accomplishes but one-half of the duty of ventilation. The other half consists in supplying a quantity of fresh air equal in bulk to that removed. It often happens that no special provision is made for this supply; in this case the entering air is drawn from many sources—out of doors, the halls, the closets, the cellars, and indirectly from many undesirable places. Special ducts, therefore, are requisite for leading the pure outer air in large quantities to the schoolroom.

Such large quantities of air as are required can not be safely introduced without previous warming. But the rapidity with which the air is changed is so great that a high temperature is not required; as a rule, heating can be effectually performed with air not hotter than 100 degrees Fah. If the ventilation is sluggish, the air needs to be made correspondingly hotter in order to keep the room warm; but air thus over-heated is apt to have an odor which indicates that it has been in some way injured in the process.

The locality from which the air supply is drawn should of course be such as to avoid impurities—dust, smoke and bad smells.

A system of ventilation which is working well and sufficiently will produce a near equality of temperature in all parts of the room. The difference between the temperature at the floor level and that at five feet from the floor should not exceed 5 degrees.

A system is efficient in proportion as it maintains its activity under widely varying outside temperatures. Ventilation is needed at 40 degrees as much as at 0°, but it is much harder to keep up a sufficient action in the former case. If the system is based on the draught of heated flues, some additional means for increasing the heat of the flues ought to be available for such mild weather.

The relative humidity of air commonly breathed in our winter climate is low, compared with that in Western Europe. It becomes of necessity still lower when warmed. It is not, however, proved that the dryness thus obtained is generally prejudicial to health, either in schools or hospitals, although some individuals appear to require greater moisture. A part, if not the whole, of the unpleasant effect of breathing super-heated air is due to the bad ventilation, and the excessive temperature.

The thermometer placed at five feet from the floor should mark an average of 65 degrees to 70 degrees in our climate. This is considerably higher than is found desirable in Western Europe.

It is to be presumed that the entering air is warmer than that which leaves the room, since it contributes a fraction of its heat for the warming of the walls and windows. If introduced at the upper part of the room, it will therefore fall towards the floor by degrees as it becomes cooled. Hence a level near the floor is a natural one for its exit. The proportion of CO_2 at the upper level of the room is not essentially different, on the average, from that in the lower part, and the level of the orifice of extraction is a matter of indifference as regards that point. If it be our object to get rid of superfluous heat, we should discharge the air from the top; this, however, is not to be considered normal or regular, but only to be applied when heat is excessive, as (for instance) in evening schools with artificial light.

It is possible to apply the above principles to the ventilating of the smallest school house. A single room can be heated with an upright cylinder stove of ordinary construction, having around it an air space enclosed by a jacket of sheet iron. In the floor beneath the stove an opening is made, connecting with a flue led to the outer air, through which there will be a rapid and abundant inflow of pure warmed air. The supply flue may run in two directions, so as to be exposed to different winds, and each point of opening should be guarded with a valve. For the escape of foul air, openings near the floor are made in the brick chimney-flue, which should stand at the

far end of the room. The stove funnel is carried across the room into the chimney, and its heat insures an upward draught. Open grates and ordinary stoves are aids to ventilation, but perform only a small part of the duty required.

"Direct radiation," or the use of steam heaters in the rooms to be warmed, furnishes no supply of fresh air. If ventilation is fully provided for, as above described, direct heating is admissible as *supplemental* supply in exceptional cases; but as a rule its use is destructive of good ventilation.

Effective work can be done either by furnaces or by steam heaters in the cellar ("indirect" radiation). In both cases it is exceedingly desirable to provide liberally in respect to the size and power of the apparatus.

On the question of *economy* in ventilation, and the *necessary expense* of good ventilation, much may be said. A great amount of warm air is necessarily thrown away in ventilation. It is estimated that a very perfectly ventilated building, filled with students, expends 50 per cent. more coal than the same building empty and closed, the temperature being the same. This difference would be greatly lessened if we could compare the case of a well ventilated, occupied building with one badly ventilated and occupied; the latter wasting, as it does, a considerable amount of heat by open windows and by the over-heating which often accompanies bad ventilation. It is certain that the additional annual expense per pupil, of the best ventilation, need not exceed the price of one or two cheap lunches. The effect of perfect ventilation, where it has been tried, is, to increase the pupil's power of work about 50 per cent. which is a direct saving to the town that pays for his schooling. To which must be added the gain in public health (which is not easily to be estimated); since a large percentage of school children are suffering at present a perceptible diminution of vigor from the effects of foul school air.

The employment of automatic regulators for keeping school rooms at a given temperature is recommended as both economical and healthful. Modern methods often uselessly overheat the cellar in which the furnaces stand. Waste steam from the boilers ought to be converted to the use of heating radiators. A liberal salary to janitors or engineers may insure a more intelligent control of the fuel.

The available methods for compelling air to move in ventilating flues are practically two: 1, the ascensive force of heated air; 2, fans driven by steam or electricity for forcing air into the room or drawing it out by "suction." For the former method, it is generally desirable to make available the otherwise wasted heat of smoke flues, by causing them to run in the foul-air shaft.

D.—PERSONAL HEALTH.

1. A *minimum* age for entering primary schools may properly be stated as five completed years.

2. The program of daily work for little children should be widely different from that for older ones. A forenoon session may last three hours; but no exercise should last continuously more than fifteen or twenty minutes. There should be a constant change of activity, passive attention alternating with active work; recesses of a few minutes coming very frequently, and recesses of fifteen or twenty minutes at least twice in the session. Adherence to one posture should be required for only a very few minutes at once. Singing should come in more than once during the session. If an afternoon session of two hours be added, the tasks should be lighter than the forenoon tasks. Two hours must intervene between the sessions. The total amount of task-work and recitation required in primary schools may equal half the nominal period of the sessions.

3. Young persons of both sexes at periods of rapid bodily growth, and especially at that of sexual development, not infrequently require special relief or rest from school-work, which in the case of girls may come at periodical intervals.

As the age increases, the power of concentration and continuous work is strengthened. At the age of 14, *five* hours of sessions will be equivalent to *four* or *four and a half* hours of work; to which an hour of home study may rightly be added. The usual length of recitations at this age may be about half an hour; long recitations encourage listlessness. For pupils of full growth (18), eight hours of school sessions and home work is an average *maximum*. This does not exclude the possibility of a greater amount of work for limited periods in exceptional cases among advanced pupils in vigorous health. It is presumed in these estimates that the school has two half holidays or one whole holiday weekly.

4. The attention of teachers and parents should be called to the necessity for wholesome and sufficient meals for scholars; especially, breakfasts and lunches. The health of many children is supposed to suffer from over-study, when the chief cause of the mischief is neglect to eat a proper breakfast; or the substitution of pastry and sweets for plain lunch. The establishment of lunch counters for the sale of hot milk, cocoa and plain food would be very beneficial in the case of many city schools. Lunch is not a superfluity, but a necessity, in cases where long sessions and distant residences keep the pupils away from home five or six hours at a time.

5. The systems of calisthenics in common use—free-hand exercises in full class rooms, for five minutes at a time—serve a very useful purpose as a partial relaxation, but are quite inadequate, considered as a means of bodily development. For the latter purpose, gymnastic training of a more serious kind is very desirable. Its influence is felt in the development of the mental faculties; it adds force and firmness to the moral nature; it furnishes an important correction of those depressant influences of city life, which have a tendency to lower the vitality of millions of our population at the present time. It is hoped that the systematic teaching of gymnastics to all our public school children may soon become an indispensable part of the school course, but it must always be remembered that the more violent athletic sports tend to heart strain and other disabilities that shorten life.

6. The habit of constipation is often acquired as a result of deprivation of bodily freedom, and confinement to a stooping or sitting posture, together with the mental tension of school work and the sense of constraint. In order to avoid this great evil and its frequent attendant, dyspepsia, it is desirable to give recess with liberty of play out of doors, as often as is convenient. This is especially applicable to young children. Retention of urine now and then occurs under too strict school discipline, and may work serious injury. The friendly oversight of a teacher at recess is desirable, often indispensable.

E—EYESIGHT.

The eyes are often affected injuriously by school work carried to excess, or conducted amid unwholesome surroundings. There is a strong tendency to the production of near-sightedness; which can, to a great extent, be remedied by the avoidance of known causes. Among the direct causes of near-sight are—bad light, bad position at work, too protracted work, bad print; and to these must be added, as indirect causes, bad ventilation and heating, poor food, and whatever impairs the vigor of health.

Light in schoolrooms should never strike the pupil in the face while at work.

Excess of light is less common than deficiency, but is also harmful. No desk can be more than twenty feet from the windows of an ordinary schoolroom (supposing the top of the windows to reach the height of about twelve feet from the floor) without impairing the light.

A stooping position, and the wearing of tight neck-clothing, while at work, are injurious to the eyes.

To prevent scholars from taking bad positions in writing, it is recommended that children be directed to sit upright, facing the desk squarely, and be taught vertical writing. Also, that desks be slightly inclined; their front edge to overlap the edge of the seat a little; and the height to be such that the fore arm easily passes over it. Seats ought to support the back and shoulders in reading, without favoring a tendency to lounge. The foot must rest firmly on the floor or on a foot-rest. The average graded school requires three sizes of desks and seats to each room.

The habit of holding work too near the eyes strains them and fosters a tendency to near-sight. For the youngest children, this distance should be not less than 25 cm. = 10 inches; for those of 8 to 10 years, 33 cm. = 14 inches. Badly proportioned desks and seats, especially where they are too far apart, favor this habit.

The eyes should have some rest from tasks every half-hour. Fine embroidery, fine detail in map-drawing, or penmanship, and the use of fine type, must be discouraged.

Such defects as far-sight, astigmatism, and affections of the muscles of the eye, are rather common in school children; they often cause headache and other forms of illness. The remedy lies in the use of suitable glasses, as prescribed by physicians. Test-types may properly be used by teachers to ascertain what scholars have marked defects of sight.

F—SANITARY ADMINISTRATION OF SCHOOLS.

The duties comprised under this head may properly be intrusted to one man in small places; in large towns a division of work will be necessary. The officer upon whom the charge is laid—or in all cases, the chief officer—must be a well-educated physician, with a special and practical knowledge of sanitary science. He should be appointed by the school authorities. He is here designated the medical school officer. It is the duty of this officer to satisfy himself (by personal inspection, if necessary) that all children admitted to school are protected, either by successful vaccination or a previous attack of the disease, against smallpox. He should also formulate, and have power to enforce, in conjunction with the State or municipal health officers, regulations to prevent the dissemination of infectious diseases through the schools.

All plans for school buildings, premises and appliances should be submitted for his approval in sanitary points. Personally or by deputy he should examine all buildings and premises, with reference to the arrangements for ventilation and heating, size and lighting of rooms, furniture, water closets, urinals, drains, plumbing, water supply, safety from fire, and other points affecting health or safety. He should have the right of entrance at all times, and should be armed with ample powers.

The medical school officer should give personal instruction to teachers, of a practical kind, embracing: 1, an explanation of the existent sanitary regulations, with such physiological reasons and comments as may seem called for; 2, explanation of the sanitary arrangements existing in the schools, their practical management, and so much of the theory as may seem desirable; 3, explanation of the structure and use of the eye, and other parts of the bodily frame, with remarks on food, clothing, recess, study and kindred topics, so far as it seems to him desirable and useful to enter upon such considerations.

The said officer has medical authority in cases of immediate exigency, but is not authorized or expected to bestow further medical care as a part of his official duty. The extent to which personal medical *inspection* of scholars is made, and individual medical *advice* is given, must vary much with different classes of the population. It is not susceptible of extended adoption at present in America.

THE SCHOTT METHOD OF TREATING CHRONIC DISEASES OF THE HEART BY BATHS AND GYMNASTICS.

Read at the Meeting of the Mississippi Valley Medical Association, at Indianapolis, Oct. 6, 1893.

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We hear much nowadays about the wonderful progress made by modern surgery. In contrast thereto the advances along the lines of internal medicine, particularly of therapeutics, appear insignificant, and their actual importance is likely to be underestimated. Nevertheless, if the history of therapeutics be read aright for the past hundred years, many suggestions will be found that mark the beginnings of new eras in the art of healing. Such an epoch, for example, began with the introduction of digitalis in England by Withering toward the end of the last century. No single drug, perhaps, has rescued more lives from an untimely grave than that incomparable and indispensable remedy. Yet immeasurable as are its capabilities, there are well-recognized limitations to its usefulness. Accordingly many attempts have been made to discover a substitute free from its objections or some means of supplementing its deficiencies. As yet no such agent in the form of a drug has been found. But, startling as the statement may sound, such a means of replacing and supplementing digitalis has at last been devised in the therapeutic method which is the subject of this paper. And the honor of developing if not discovering it belongs to two German physicians, Dr. August Schott, now dead, and his surviving brother Dr. Theodore Schott. Early in this century

patients with heart disease were subjected to a vigorous course of depletion by blood letting and reduction of diet, after the manner of Albertini and Valsalva, in the hope of quieting the excited heart's action and overcoming hypertrophy. But such measures were calculated to weaken rather than strengthen the cardiac muscle, and originated in an erroneous conception of the real difference between cardiac hypertrophy and dilatation. In contrast to this treatment the great Stokes suggested exercise and mountain climbing, as the best mode of inducing hypertrophy of the heart-muscle through increase of its physiological function. Strange to say, his suggestions were but little heeded and indeed became in time forgotten. During the last decade, the recommendation of Stokes was revived and put in practice by Oertel of Munich who, however, supplemented it by the reduction of the dietary and of ingested liquids. Such remarkable results were obtained, and their publication aroused such enthusiasm, that this new method of management was tested extensively.

Further trial of the Oertel method disclosed objections, however. Indeed, along with reports of benefit in some cases, came published instances of not only positive injury, but even death due to the treatment. Opponents arose, foremost among whom were Sommerbrodt[1] and Lichtheim[2] of Germany; so that now Oertel's method is considered appropriate to but a limited number of cases, those only in which compensation has not been lost. Contemporary with the investigations of Oertel, Drs. August and Theodore Schott were engaged at Bad-Nauheim in studying the effect on the heart and circulation of warm saline and carbonated baths. Their observations and conclusions were first published at the beginning of the last decade. A certain Dr. Beneke,[3] also at Bad-Nauheim, had some years previously reported his observations on the effect of the baths in cases of articular rheumatism, and asserted his belief in their efficacy in promoting the absorption of inflammatory products upon the endocardium, and thereby occasioning the cure of cardiac lesions depending on such endocarditic processes. But the condition absolutely indispensable to their absorption was, he declared, that they be of recent origin.

Doubt may be wisely expressed as to the accuracy of Beneke's observations, or, rather as to the validity of his conclusions. It is a well-recognized fact that after a time murmurs and other signs which have led to a diagnosis of some lesion depending on previous endocarditis, occasionally disappear, leaving the organ apparently free from disease. Moreover it is so confessedly difficult, nay even impossible, to determine in every case whether a murmur be organic or inorganic, that it is scarcely hypercritical to suggest an error on the part of Beneke in having mistaken for endocarditic murmurs what were in reality inorganic. Although his observations seem to have been the first[4] to demonstrate the beneficial rather than injurious effects of warm saline baths charged with carbonic acid in cases of heart disease, they were, nevertheless, limited mainly if not exclusively to patients displaying supposed signs of previous endocarditis. His work in no wise depreciates the value of that done by the Schott brothers, nor invalidates the claim made by Dr. Theodore Schott that they were carrying on studies wholly independent of Beneke. Furthermore, the latter's work sinks into insignificance in comparison with the extent and variety of the observations of the Drs. Schott. And it may be said with truth that their experience has embraced all forms of cardiac disease which are at all suitable for treatment by baths. Moreover, his extensive experience has enabled Dr. Theodore Schott to determine the indications and contra-indications for the employment of his method. In addition, Dr. August Schott and his brother originated a system of gymnastic exercises against resistance which forms an essential part of their treatment. For these reasons it is customary to characterize this particular form of cardiac therapeutics as the "Schott method." Indeed, it is no more than the just desert of Dr. Theodore Schott and his late brother to attribute to them the credit of having introduced and elaborated a method capable of restoring most cases of heart disease to a state of complete compensation, after the failure of other means, such as digitals.

DESCRIPTION OF THE METHOD.

1. The Baths.—This consists in the administration of warm baths, either simple saline devoid of carbonic acid, or saline containing a large percentage of the gas. The temperature varies according to special indications, between 92 and 86 degrees Fahrenheit, these extremes being rarely exceeded. The duration of the bath is five or eight to twenty or twenty-five minutes, being short at first and gradually lengthened. Simple saline baths are generally given at the commencement of the course, those containing carbonic acid being administered only after the patient's heart has gained strength sufficient to endure them. The initial strength of the baths varies according to indications. In cases of extreme cardiac weakness or of marked anæmia, waters deprived by evaporation of all carbonic acid and much of their saline constituents are employed. Gradually and cautiously the baths are strengthened by the addition of salts in the form of what is known as "mutterlauge," which is nothing more or less than the strong solution of salts collected in the process of evaporation just alluded to. At the same time, as the degree of concentration is increased, the temperature of the baths is gradually reduced. At last, after a variable period, as determined by the patient's condition, saline baths charged with carbonic acid, in such a percentage as is indicated for each individual patient are administered. These have a temperature of 30.5 degrees Centigrade or about 87 degrees Fahrenheit, and is that of Spring 7, most commonly prescribed, as it flows into the tubs. Baths are not ordered daily during the whole course, but a day of rest is interposed as often as the physician deems necessary. Dr. Schott generally orders a day of rest after three days of baths. But one bath is taken a day. This is by preference in the morning, but not sooner than one hour after breakfast. Immediately after his bath the patient returns to his room where he partially undresses and lies down, warmly covered, for at least one hour.

[1] Sommerbrodt. "Ueber den Einfluss des Bergsteigens auf das Herz und die Gefässe, Berliner Klin. Wochr. 1885. Dalegung der Hauptbedeutungen für die Ueberanstrengung des Herzens, Berliner Klin. Woche. 1889."

[2] Verhandlung des Congresses für Innere Medicin zu Wiesbaden. 1889.

[3] Beneke. "Zur Therapie des Gelenkrheumatismus und der damit verbundenen Krankheiten." 1872.

[4] Rosenstein. Von Ziemssen's Cyclopedia. 1876.

Not only is physical rest advisable after a bath, but during the bath absolute quiet of body and mind is enjoined that the heart may not be subjected to unnecessary strain. Such a course of balneological treatment extends over a period of from five to seven weeks. A month of rest at some salubrious spot is then taken, after which a second course of four to six weeks is advisable in many cases.

2. *The Gymnastics.*—A second factor in this method considered indispensable by Dr. Schott consists in the employment of extremely simple, but systematic exercises of the trunk and extremities. A fundamental principle of these gymnastics is that the patient's movements be restricted by another person, preferably by a trained assistant, styled the gymnast. These exercises consist of movements of extension, flexion and rotation. Movements of the hand and foot apart from the corresponding arm and leg are not practiced. But such exercises as are permitted by the elbow, shoulder, knee and hip joints are carried out, either of the upper extremities in unison, or singly, as in the case of the lower limbs. In addition to these movements of the extremities, the trunk is bent and rotated in such manner as is permitted by the spinal column and calls into play the chief lumbar and abdominal muscles. Space will not permit an extended description of these exercises at this time. It must suffice, therefore, to state the laws that Dr. Schott lays down for the guidance of both patient and assistant. They are as follows:

A movement should never be immediately repeated. Each one should be followed by a short period of repose, and should not be made so rapidly or against such a degree of resistance as to cause acceleration of the pulse or respirations. All movements should be carried out slowly and steadily, without jerkiness, and joints not actually in use during the movement should be kept extended. That the exercises may be carried out in this fashion, the assistant should be carefully instructed, not only how to exert proper resistance, but should be able to bestow intelligent and watchful attention upon the condition of the patient during the seance and at once insist on rest upon any evidence of respiratory or circulatory embarrassment. In some cases the patient resists his own movements by calling into play antagonistic muscles, and is thus enabled to exercise independently of a gymnast.

EFFECTS OF THE BATHS.

That there is a definite effect exerted by saline baths is beyond question, as shown by clinical observation and experiment. Dr. August Schott in the laboratory at Breslau, subjected shaved rabbits to baths in a tub so constructed that by means of a movable partition it was divided into two chambers or compartments. One was filled with plain, the other with saline water, both of the same temperature. The animal was first placed in the plain water bath, and the effects of the blood pressure noted by means of a mercurial manometer introduced into the trachea. Then, little by little, the movable partition was raised, thus permitting the admixture of the salt solution with the plain water, and the effects were again carefully observed. It was thus noted that as the surface of the body became subjected to the influence of the salt solution, the blood pressure rose 5 to 10 mm. with a 10 per cent. salt solution. Carbonated water increased blood pressure 10, 20 and even 30 mm.

From careful and abundant experimentation it has been pretty well determined that the absorptive power of the skin is quite limited, and that there is practically no absorption of salts in solution in water. Dr. Theodore Schott is of opinion that in case of salt baths the effect is produced through "imbibition" or penetration, not absorption. The salts come in actual contact with the peripheral ends of the sensory nerves residing in the skin, and the stimulation thus exerted is carried upward to the central nervous system, from which centers a reflex influence is exerted upon the heart and blood vessels. But whatever be the *modus operandi*, it is certain that, clinically and experimentally, we observe as a result of these baths a slowing of the pulse with increased volume and strength. At the same time the irregularity, if such have existed, is lessened or even disappears. It is evident, therefore, that the cardiac contractions are increased in vigor and the cavities are better emptied. This permits a positive diminution in the size of a dilated heart. That this is so, can be and has been repeatedly demonstrated, by means of accurate percussion of the cardiac areas, before and after the bath. Proof of this will be given in the following report of the writer's observations. Moreover, the heart sounds become louder; the previously accented second pulmonary sound less accented and the second aortic sound more intense, thus showing a better filling of the arterial system; murmurs inappreciable because of cardiac weakness may be temporarily intensified and rendered audible. This marked and beneficial effect of the action of the heart does not disappear at once, but persists for a considerable time subsequent to the baths.

Subjectively, the patient, on stepping into the bath, experiences a more or less pronounced sensation of chill, according to the temperature of the water. In about a minute this feeling of chilliness is replaced by one of agreeable warmth and well being. The first one or two baths occasion a feeling of weight or oppression on the chest, sometimes most pronounced in the epigastrium. Contrary to what might be expected, respirations are not rendered more difficult and rapid, but are generally slow, full and regular. So long as absolute quiet in the bath is maintained the subjective sensations are agreeable and comfortable. But any exertion, however slight, is attended by increased oppression of the chest, acceleration of the pulse and a sensation of cold in the part of the body moved. These sensations are temporary and quickly subside upon a return to perfect physical rest.

After the bath there is usually a sense of well being, particularly of ease and lightness in the chest. If dyspnea have existed previously, it is now somewhat less. The first few baths are apt to induce some feeling of fatigue and disposition to sleep. Should the initial chilliness continue and debility, insomnia and anorexia appear and persist during a course of such baths, there is some defect, either of temperature, strength, duration or all of these, which demands investigation and correction.

If properly administered these baths occasion gradual and perceptible amelioration of symptoms. One of the most pronounced results which is specially apt to attract the patient's attention, is im-

proved diuresis, indicating lessened renal congestion. Indeed, there is often an urgent desire for micturition during the bath.

EFFECTS OF THE GYMNASTICS.

Upon the heart and pulse these may be said to be similar to those of the baths. The rate of the pulse falls and volume and strength are increased, yet not in so marked a degree as during the baths. If during the exercises a quickening of the pulse results from too great resistance or other faulty procedure, this acceleration is generally but temporary, and after the seance the quality and rate of the pulse are generally improved. However, accurate percussion demonstrates a diminution of the area of deep-seated cardiac dullness, or an actual lessening in the size of the dilated heart. Auscultation reveals similar improvement in the heart sounds and corresponding changes in murmurs to those mentioned as effects of the balneological treatment. These favorable effects, however, are less enduring than when produced by the baths.

The results of these two modes of treatment are therefore similar in kind, but somewhat different in degree and duration. It is thus plain that they supplement each other admirably; and the gymnastics should form an integral part of this method of treatment.

INDICATIONS AND CONTRA INDICATIONS.

During the past twenty years, Dr. Theodore Schott has treated thousands of cases of chronic cardiac disease after this manner; and his statements are that it is suitable to all forms of chronic heart disease, excepting aneurism of the heart or of the large vessels, and advanced general arterio-sclerosis. In such cases, disastrous consequences would be likely to follow the heightened intravascular and intracardiac blood pressure produced by the treatment. Organic valvular disease forms no contra indication to its employment. Indeed, some of Dr. Schott's most brilliant results have been secured in precisely this class of lesions. Fraentzel, in his recent work on diseases of the heart, expresses himself as opposed to the use of the balneological treatment in cases in which compensation has been lost. Yet Dr. Schott has repeatedly demonstrated most striking restoration of compensation in cases of the utmost gravity that had resisted all other form of treatment. Such utterances as that of Fraentzel are based on either ignorance or prejudice. In a word, it may be stated that with the exception of those lesions mentioned, all cases of chronic cardiac disease are suitable to this method, provided the cardiac muscle retains sufficient integrity to respond to stimulus of any kind. Nevertheless, the powerful stimulation produced by the baths is capable of working great harm, even death, and undoubtedly it was this possibility which Fraentzel had in mind. Hence this method ought never to be employed by those not acquainted with the indications and versed in its details.

Functional disorders, particularly of neurotic origin, are likewise strikingly benefited. Indeed, Dr. Schott claims highly satisfactory results in cases of Graves's disease. Anemic hearts suffering from the so-called "curable mitral regurgitation," can be completely restored to health, and in a far shorter time than by any other system of therapeutics. It is specially applicable also to hearts dilated from over strain.

Although suitable to so many cases, and effecting such brilliant results in a very great number of cardiac lesions, it must not be assumed that permanent restoration to health or even lasting improvement is secured in all cases. There is a limit to human ability; and unless the cardiac muscle be capable of undergoing compensatory hypertrophy, neither this nor any other system of therapeutics can effect more than a transient improvement.

As examples of what Dr. Schott has been able to accomplish, two cases may be cited which it was the writer's privilege to examine this past summer. They were cases of patent foramen ovale; one in a girl of 15 and uncomplicated; the other in a boy of 16 and complicated by pronounced mitral stenosis. Both had come to Dr. Schott for treatment less than four years before. In both, all signs and symptoms were present at that time of loss of compensation with relative incompetence of the tricuspid valves, dyspnea, cyanosis, pulsating jugulars, and in the girl, particularly, enormously distended and pulsating liver. Œdema was not present. The hearts in both patients were greatly dilated, the pulses feeble and rapid. In both was audible a characteristic rolling murmur of maximum intensity over the body of the sternum, and in the youth there was also a long, rough pre-systolic bruit of mitral stenosis. Both patients had tried the most approved medication, and had been sent to Bad-Nauheim as a last resort. More unfavorable cases could scarcely have been found. A course of balneological treatments had been given during each of three summers, and gymnastics maintained meantime. At the date of the writer's examination, July 28, last, there was every evidence of restored compensation and both patients expressed themselves as feeling well. The boy, particularly, stated he was able to take daily walks of considerable length, and could even ascend a flight of stairs without much discomfort or breathlessness. In both there were signs of the organic lesions, but the hearts had undergone such enormous hypertrophy as to have occasioned protuberance of the sternum and adjacent ribs in a most striking manner. Needless to add, both patients were loud in their praises of the Schott method.

Case 1.—This is the case of the writer. Early in the last decade the writer's attention was drawn to this system of cardiac therapeutics by an article from the pen of Dr. Theodore Schott which appeared in the *Berliner Klinische Wochenschrift*, and which occasioned his resolve to some day visit Bad-Nauheim for the purpose of personal investigation and treatment. Circumstances did not prove favorable to the fulfilment of this design until this past summer. June 24, last, he arrived in Bad-Nauheim and presenting himself at once to Dr. Schott he was examined and subjected to treatment.

The writer is 42 years of age, weighs 147 pounds, and is five feet eight inches in height. Family history is that of strong predisposition to chronic arterio-sclerosis and consequent cardiac disease, on the father's side. but on the mother's no hereditary taint of any kind. Patient had scarlatina at 3 years; gastric fever at 19; typhoid fever at 31; never any articular rheumatism or pneumonia. At 31 years of age, history of cardiac over strain that was repeated several times in the next ten years. Six years ago the opinion was expressed by one of the ablest medical men in this country that the difficulty was an organic mitral affection, stenosis predominating. At the date of Dr. Schott's examination the symptoms were moderate dyspnœa and pain in the precordia upon walking; pulse small, very weak and rapid on moderate exertion, but not intermittent; countenance cyanotic and sallow; digestive disturbance pronounced;

urine scanty; no appreciable enlargement from passive hyperæmia of liver or spleen; no œdema. Physical examination revealed all the signs of dilatation of the right ventricle with moderate dilatation of the left, the apex beat being situated 1 cm. outside of the mammillary line, but in the fifth intercostal space. Upon auscultation the first sound at the apex was preceded by a short, rough murmur which terminated in a short systolic whiff; the second pulmonary sound was very accented and split; a diaphragmatico-pericardial friction sound was also audible over the lower border of the right ventricle. There was no evidence of chronic arterio-sclerosis. In repose the pulse was about eighty in the minute.

Treatment by means of baths was commenced the following day, June 25.

Subjoined is a chart giving the baths and their observed effects:

Chart of Baths and their Effects in Case I.

Bath.					Pulse Rate.					
Date.	Spring.	Nature.	Temperature	Duration.	Before Bath.	At Beginning	Middle.	At End.	In Bed.	Remarks.
June 25	№ 7	Simple Saline	Centi. 32½°	Min. 8					62	*1.-Slight oppression on chest & in epigastrium. 2 hrs. in bed, first sound of fair strength.
26	7	"	32½°	10		74	64	64	70	*2.-Pulse good & regular. Slight oppression. Lips slightly cyanotic at end of bath.
27	7	"	32°	10	74	74	70	68	64	*3.-Pulse during bath plainly fuller and stronger than yesterday. Less oppression. no cyanosis.
29	7	1 T. Matter-horn	32°	11	74	68	64	64	62	*4.-Pulse still fuller, more equal & tension unmistakably greater today. Still less oppression.
30	7	1	32°	12	74	68	64	64	62	*5.-Observations of yesterday confirmed.
July 1	7	1	32°	12	74	68	64	64	62	*6.-Rate the same. I am astonished at the fullness and strength of pulse at end of bath.
3	7	2	32°	14		72	68	68	74	*7.-Pulse of good strength but a little irregular in time; increased sense of warmth during bath.
4	7	2	32°	15		84	80	72	67	*8.-Intermitted several times during fore part, but more regular, stronger & full at close.
5	7	2	32°	16		80	70	65		*9.-Bath gave feeling of rest. Pulse was made regular and full.
7	7	3	31½°	18		76	64	62	72	*10.-Pulse in bath full, regular & strong. Increased diuresis after bath.
8	7	3	31°	19	70	72	68	68	68	*11.-Pulse full and strong; feeling of warmth. Climbed stairs to room.
9	7	3	31°	20	70	72	68	68		*12.-Feeling rather depressed for past day or two, probably result of gymnastics.
11	7	Effer-vescing.	Nat'l. 30½°	8	72		68	65	68	*13.-Pulse full and strong as with other baths; pleasant feeling of warmth & with slight oppression.
12	7	"	30½°	9		80	70	66	68	*14.-P. of good quality. Feel even better than yesterday. Delightful feeling of warmth during bath.
13	7	"	30½°	10						*15.-
15	7	"	30½°	12		72				*16.-P. slow, full & regular. Epigastric pulsation faint, apex beat 1 c.m. within nipple line.
16	7	"	30½°	14	Standing 100	full 88-80	fuller 76	75	65	*17.-P. taken every 3 min., remained at 76 from middle to end, tension grew greater toward end. (By Dr. Herrmann.)
17	7	"	30½°	15						*18.-Dr Herrmann made no observation today.
19	7	"	30½°	16	72	68-64	60	60	65	*19.-P. 60 after 6 min. & until close of bath, counted at intervals of 2 min. grew progressively fuller.
20	7	"	30½°	17	68	68	60	60	60	*20. In addition to usual observations (all confirmed) apex beat grew obviously stronger & epigastric pulsation disappeared while in bath.
21	7	"	30½°	18	88	72	68	64	62	*21. Pulse rate of 88 was noted just after walking, it fell before bath, after 30 min. rest to 72.
23	7	"	30½°	20	68	67	64	60		*22.-
24	7	"	30½°	20	75	75	66	64	62	*23. Am struck with the regularity & firmness of P. in bath. Its quality is excellent in general. Its sense of comfort & ease of chest follows bath past week. *24.-Baths produce feeling of chilliness followed by warmth in 1 min.; no oppression; P of good strength & full.
25	7	"	30°	20	Good 68	80	67	64	64	
27	7	" Current	30½°	8	Rather weak 85	70	76	76	62	*25. P a little irregular in time but very full and more than usually strong. In bed P was not fuller & strong as after plain effervescing.
28	7	Effer-vescing.	30½°	20	74	68	62	60	65	*26. P after 10 min. became very full, strong & regular. After 20 min. fullness & strength even more marked. In bed less strong though of g. qual.
29	7	"	30½°	20	70	72	65	62	70	*27. During bath P was a little irreg. in time & I felt considerable oppression in abdomen. P however became of g. strength & fullness.

GENERAL REMARKS.

Careful percussion of the heart before and after the seventh bath, showed slight but unmistakable contraction of its limits about 1 cm. at right border.

8th Bath. July 4. The intermittance of the pulse may have been due to the bath following too soon a hearty breakfast; but for two or three days past the gymnastics have caused oppression in the precordia

and the pulse has been small and weak on exercise.

10th Bath. July 7. I note that venous congestion is becoming less visible, and this bath produced a decided feeling of comfort in the chest. Shortness of breath is greatly improved and the action of the kidneys is remarkably free.

12th Bath. July 9. Notwithstanding the discomfort due to gymnastics for the past week the precordial dullness is certainly diminished at the right, and apex beat is permanently within the nipple line.

13th Bath. July 11. Careful percussion, before and after bath, showed a retraction of the right border of 1 cm.

16th Bath. July 15. For past day or two I note marked lessening of all symptoms, and the heart has nearly returned to normal size.

17th Bath. July 16. Dr. F. Herrmann of Charkoff, Russia, made the following observations:

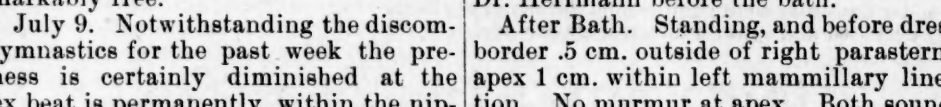
Before Bath. Percussion. Right border 1 cm. outside of right parasternal line. Apex, .5 cm. inside mammillary line and in fifth interspace. Auscultation. No audible murmur at apex; first sound distinct; slight pericardio-diaphragmatic rub below lower border of right ventricle to left of epigastrium; slight accentuation of second pulmonary sound. Pulse 100; not very strong. The rapidity and weakness of the pulse this morning was due to springing suddenly out of bed, and to walking and talking to Dr. Herrmann before the bath.

After Bath. Standing, and before dressing. Right border .5 cm. outside of right parasternal line; and apex 1 cm. within left mammillary line. Auscultation. No murmur at apex. Both sounds are fuller and stronger. Second pulmonary a little more accented; second aortic equally as strong as second pulmonary; pericardial rub a little more distinct. After walking leisurely back to room and remaining in bed for ten minutes pulse 65 and of good quality.

19th Bath. July 19. Dr. Herrmann examined me again this morning and verified the changes in the heart noted after bath No. 17. Except that the pulse is a little weaker this morning there are no ill effects from my fatiguing trip into Frankfurt yesterday. Dr. Herrmann examined my heart after I got to bed and pronounced the first sound prolonged but free from murmur.

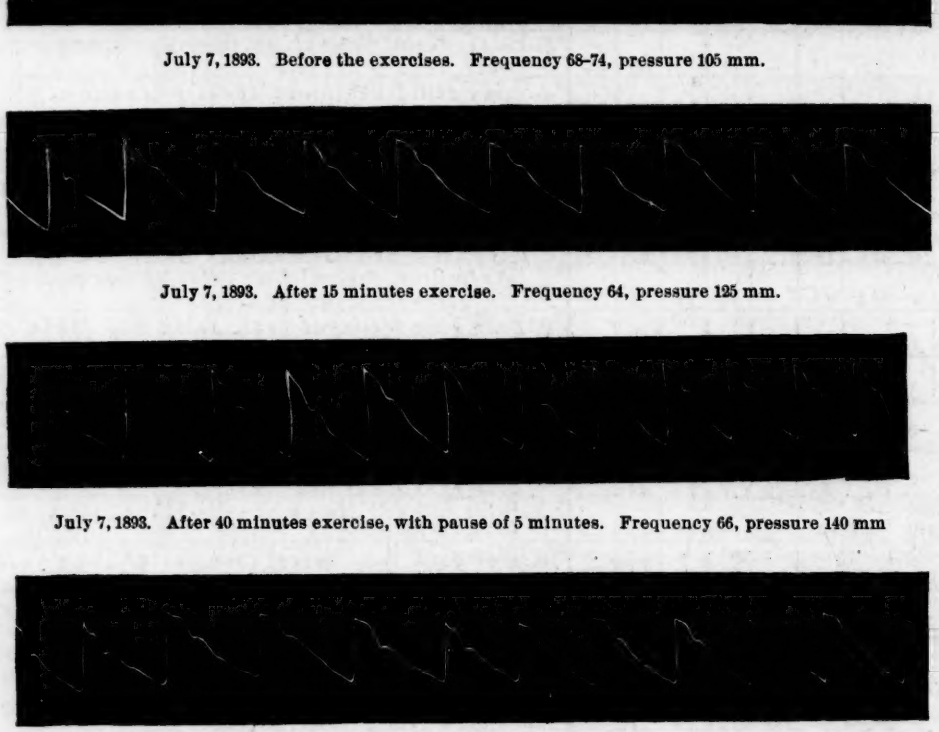
July 24. Am sensible of increased strength of the

July 7, 1893. Before the exercises. Frequency 68-74, pressure 105 mm.



July 7, 1893. After 15 minutes exercise. Frequency 64, pressure 125 mm.

July 7, 1893. After 40 minutes exercise, with pause of 5 minutes. Frequency 66, pressure 140 mm



July 14, 1893. Pressure 155 mm.

July 30, 1893. After 5 weeks treatment. Pressure 165 mm., frequency 92.

heart's action; its rate is not so greatly increased on getting out of bed as formerly, and walking up the gentle ascent to the Concert Garden yesterday produced no shortness of breath, only a slight feeling of fullness in the precordia; pulse rate was not very fast. At Dr. Schott's examination on the 21st he was astonished at the change for the better—pronounced the heart of normal size; the first sound prolonged and free from murmur.

July 25. Examined again by Dr. Schott last evening; found no murmur and heart of normal size; his observations confirmed by myself to-day.

25th Bath. July 27. Bath produced agreeable sensation of warmth, alternating with slight coolness as the current swept up along the body. The heart sounds after bath intensified and clearer. I feel a little bit light-headed. The CO_2 was fanned away from my face to prevent inhalation. Before close of bath a sensation of fullness and pressure in lower part of precordia which lasted during the walk home.

26th Bath. July 28. First sound at apex less prolonged and clearer than it was before bath. Second aortic sound fuller and stronger.

27th Bath. July 29. The day was cold and rainy. Less gas in water than usual, nevertheless felt as if I inhaled gas.

After six baths had been taken, that is, at the end of a week's treatment, the pulse pressure, as recorded by Basch's sphygmomanometer, was 105 mm. of mercury, the normal being about 130. At the end of five weeks, after balneological and gymnastic treatment, the pulse pressure had risen to 165 mm.

The subjoined sphygmographic tracings explain themselves. The first three were taken just before and during the first gymnastic treatment, and were designed to exhibit the influence thus exerted on the blood pressure. It will be seen that tracing No. 3 shows increased vigor of the cardiac contractions, but is far from being a normal tracing. No. 5 taken at the close of the course of treatment speaks for itself and illustrates the improvement in the heart and circulation and confirms the evidence given by the sphygmomanometer.

Since leaving Bad-Nauheim, August 2, the writer has not been able to keep up the gymnastics, and his pulse is not as full and strong now as then. But his heart remains normal in size, his previous symptoms have not returned, and he considers himself in excellent health. He intends, however, to supplement the treatment he has had by another course of baths prepared artificially and to resume the exercises.

Case 2.—July 16. Male; 18 years. American. History: measles as child, also diphtheria. Muscular (?) rheumatism in legs and especially of late across shoulders. Formerly given to much swimming and to holding breath under water until head felt as if "it would burst." Fond of violent exercise. Physical examination before bath, standing.

Percussion. Right ventricular border on right parasternal line; apex beat fifth space close within mammillary line. Auscultation. A pure mitral systolic murmur at apex, accented second pulmonary sound. Pulse 92, regular, soft.

In Bath, Spring No. 7, 32° C., 2 liters "Mutterlauge." Duration fifteen minutes. Pulse, on getting in 92; pulse, after three minutes, 100, and fuller; pulse, after six minutes, 96 full and strong as before; pulse, after nine minutes, 96, quality still better; pulse, after twelve minutes, 92, tension still greater; pulse, after fifteen minutes, 92.

Examined immediately after bath. Standing. Percussion. Right border 1.5 cm. within right parasternal line. Apex beat 1 cm. within nipple line and impulse stronger. Auscultation. The murmur softer. Second pulmonary sound stronger. Second aortic sound also stronger.

July 26, Bath; effervescing. Duration twelve minutes. Temperature 30.5° C. Examination before bath. Right border is a shade outside parasternal line. Apex beat 1 cm. inside mammillary line. Pulse, standing before bath, 96; small and compressible. Pulse, in bath three minutes, 104, but fuller. Pulse, in bath, six minutes, 94 and full, after sitting more upright. Nine minutes, 92, not quite so full and a little irregular in force and volume.

In bath, palpation of apex beat detects a slight thrill and the impulse is more diffused, being extended into the sixth space and is a little less powerful. Pulse, twelve minutes, 92, and full but rather compressible. After bath. Apex beat a little more toward the median line, and a little less pounding. First sound strong and no distinct murmur.

Case 3.—July 21. Dr. Herrmann of Charkoff, Russia. Age 31; no history of rheumatism; at 13 measles followed by croupous pneumonia of left apex, resolution; formerly as student drank much beer. Corpulent with very large abdomen; except constipation no symptoms. Considers himself healthy but pulse uniformly rapid, 90–96. No dyspnœa on exertion.

Physical examination before bath. Apex not visible, but palpable in normal situation. Percussion, normal. Auscultation. No murmurs. First sound at apex a little short and distant. Second sounds of proper relative strength. Pulse, standing before bath 96, soft.

1st Bath. Simple, saline. Regular in rhythm, firmer. Temperature 30.5° C. Time, ten minutes. Pulse after three minutes in bath, 76; after six minutes full and stronger, a little irregular in time; pulse, after nine minutes 76; pulse, after ten minutes 76; on examination after bath, heart limits were the same, except perhaps a trifle retracted on the left side, and the sounds are louder and fuller, especially the second.

2d Bath. July 27. Effervescing bath. Temperature 30.5° C. Time, ten minutes. Pulse, before bath sitting, 88, not very strong; pulse, after getting in, 80; pulse, after three minutes, 72; pulse, after six minutes, 70; pulse, after nine minutes, 70, stronger and fuller.

Pulse grew stronger and fuller, but was occasionally delayed without being intermittent. The movement and speaking increased the irregularity. Doctor says he has never felt so weak in a bath before. He noticed, as also did the writer, a slight burning or warmth of the skin, the burning being particularly marked on the scrotum.

3d Bath. July 28. Effervescing bath. Temperature 30.5° C. Time, twelve minutes. Two hours after breakfast. Pulse, before bath, 92; pulse, after one minute, 70, fuller, irregular in time; pulse, after four minutes, 72, more irregular but full and fairly strong; pulse, after eight minutes, 76, more regular, full and strong; pulse, after twelve minutes, 72, quality same, more regular. No sensation of weakness, that of yesterday being due, according to Dr. Schott, to inhalation of CO_2. Auscultation. Detects no difference in heart sounds to-day.

Case 4.—H. H., male; 21 years. History: thinks he had scarlatina at 5; cholera morbus at 12; measles at 16. No symptoms but constipation and slight flatulence. Physical examination. Apex beat in normal situation and of good strength. Percussion. Size of heart normal. Auscultation. Sounds free from murmur and strictly normal, except undue accentuation of second aortic. Lungs healthy.

First observation July 27, 10 A. M., two hours after light breakfast of coffee and rolls. Bath; plain water. Temperature 30.5° C. Time ten minutes.

Pulse sitting varied 88–94, a little irregular in time; rather small and weak.

Pulse, after three minutes 84, a little irregular; pulse, after six minutes 76, fuller, stronger but a little irregular in time; pulse, after nine minutes 72, full and strong.

Auscultation. After second bath, aortic less accentuated and all heart sounds strictly normal and loud. Patient felt a constriction about the waist, and legs were not quite warm.

2d Bath. 4:50 P. M., two hours and twenty minutes after dinner. Bath, simple saline. Time ten minutes. Temperature 30.5° C. Before bath, sitting, pulse, 88, fairly full and regular but somewhat soft. In bath, pulse, after one minute 72, and somewhat irregular in time; pulse, after five minutes 64, much fuller and stronger, more regular; pulse, after nine minutes 64, full, strong and regular.

There was no feeling of chilliness of extremities as in morning. Heart sounds after bath clear and strong, and second aortic rather less ringing than before.

3d Bath. July 28. 4:20 P.M. Two hours and twenty minutes after dinner. Thermal salt bath with 3 liters

"Mutterlauge." Temperature 30.5° C. Time ten minutes Before bath, pulse 88; in bath, pulse, after one minute, 75; was irregular in time but became full and strong; pulse, after five minutes, 64; pulse, after ten minutes, 64. Bath gave no sensation of chilliness but rather one of warmth and comfort. The heart sounds after bath were loud and clear.

4th Bath. July 29. 4:15 P. M. two hours after dinner. Bath effervescing, 30.5° C., ten minutes.

Before bath, pulse 88, soft and irregular; pulse in bath one minute, 72, still, soft and irregular; pulse, in bath five minutes, 70, weak; pulse, in bath ten minutes, 65, fairly full and strong. The weakness and rapidity of the pulse during middle of bath due to inhalation of CO_2. When that was fanned away from face, pulse began at once to improve,

NOTES ON EXERCISES WITH RESISTANCE.

Case 5.—June 30. Mr. H., age 69 years; occupation, farmer history of alcoholic abuse; symptoms of cardiac insufficiency since last fall. Percussion. Heart greatly dilated on both sides from 2.5 cm. within right nipple transversely to 3.5 cm. outside of left nipple, and on auscultation feeble sounds but no murmur. After exercises for forty-five minutes, right border retracted 2.5 cm. and left border to a corresponding extent. Pulse before 114, not much changed in rate but stronger and fuller.

Case 1, Dr. B. (Continued).—First exercise. July 1. Pulse before 68-74. Pressure 105 mm.; after six minutes, 64, quality apparently better; after fifteen minutes, same, quality better; after twenty minutes 64, pressure 125 mm.; after thirty minutes, 66, pressure 140 mm. Percussion. At twenty minutes, border of right ventricle moved inwards 1.5 cm. Absolute dullness also 1.5 cm. Apex before exercises was 1 cm. outside of nipple, now .5 cm. within.

Second exercise. July 2. Pulse, before, 62; after fifteen minutes, 65; after 35 minutes, 66.

Apex beat before, accurately on nipple line, afterwards 1 cm. inside. Right border (auscultatory percussion) which was 1 cm. further from median line than upon rising at 7 A. M., had returned after exercise to the position of early morning, 1 cm.

Third exercise, July 3. Pulse, before 80; after ten minutes, 62; fifteen minutes, 66, but stronger; after 35 minutes, 68; somewhat fuller and stronger.

Fourth exercise. July 4. Pulse at beginning, 84. After fifteen minutes, 69. Thirty minutes, 72. The exercises today have not slowed the pulse below 70, from 84 at beginning, consequent upon climbing the stairs. Neither was the pulse rendered greatly stronger or fuller. I think the resistance to the arm movements has been too great for they produce precordial distress. When resistance is very slight they produce a sense of well being, and a favorable effect on the pulse and action of the heart is at once perceptible. Now after a few minutes rest in bed the pulse is slow, steady, and fairly full and strong.

Fifth exercise. July 5. Pulse, before, 67. Pulse after fifteen minutes, 62. Pulse after thirty-five minutes, 60. When properly adjusted, the exercises give a sense of comfort and well being.

Sixth exercise. Pulse slowed to 64, of good volume. Gymnastics have agreed with me; comfortable feeling.

Ninth exercise. July 9. The exercises to-day agreed with me much better, owing probably to my breathing more deeply and regularly.

Tenth exercise. I have discovered that the fault lay, not with the exercises but with me. I held myself too rigid and thereby put too great a strain on the heart. To-day after I made that discovery the exercises agreed with me very well. Dr. Schott examined my heart this morning, and found the dilatation of the right ventricle nearly gone, the epigastric pulsation entirely gone and a systolic apex murmur in the place of the previous presystolic. The second sound pure and the second aortic sound much stronger; in short the indications of a better filling of the arterial system and lessened venous engorgement.

Seventeenth exercise. July 17. The exercises have been agreeing with me for the last several days. Can put forth considerably more resistance without feeling of discomfort in the least; pulse was rapid to-day before the exercises because of much walking and climbing stairs, but has been slowed and strengthened by the gymnastics to its usual rate, 65.

Eighteenth exercise. July 18. Pulse before, 84. Pulse after fifteen minutes, 84, but fuller. After thirty minutes, 88, but still fuller. Felt comfortable, endured much more resistance, am altogether pleased with the exercises. The quickening of the pulse was due to increased resistance.

Twenty-second exercise. July 23. Before the exercises to-day my pulse was, although not counted very rapid, feeble in consequence of much unwise straining at stool, and I felt uncomfortably oppressed in the precordia. After the exercises the pulse was 96, and considerably stronger and fuller and the feeling of discomfort at the heart was gone, having diminished gradually as the exercises progressed.

The foregoing observations corroborate the statements made, concerning the effects of the baths and gymnastics. In Case 1 it will be seen that the pulse became slowed during bath from two to fifteen, most commonly six to ten beats in the minute. The only exception was in the case of the effervescing current bath, and that was probably because it was too stimulating. In the second case there was no slowing of the pulse although the quality was improved. This patient was not one of Dr. Schott's, and the writer became satisfied from daily observation of that patient that the physician did not keep a sufficient watch of the effects of the baths, but prescribed stronger ones than the patient was prepared to take; or that there was something in his daily habits which defeated the end sought and which should have been corrected. This confirmed me in the belief that patients undergoing this treatment should be carefully and frequently observed, as is done by Dr. Schott, even at the risk of unfavorable criticism. The irregularity of the pulse manifested by the two other individuals with healthy hearts is not easy of explanation, and space forbids any theorizing upon it here. They serve to emphasize the effect of the baths, particularly of the saline as compared with the plain water ones. The effects of the exercises are sufficiently explained by the observations noted down. That the writer's observations were so meager is a matter for regret, but it could not very well be avoided. An attempt was made to record sphygmographic and sphygmomanometrical observations during the baths, but was frustrated by the inability to procure the instruments in time. The assurance was given by Dr. Schott, however, of such observations having been made in times past with the result of confirming the claims here set forth.

It only remains to state that, inasmuch as the treatment can be carried out in this country by baths prepared artificially, and by the training of attendants to give the gymnastics, the writer has established bath rooms for this treatment. Although he does not employ it to the entire exclusion of all medication he, nevertheless, is giving it a careful and extensive trial. Like all other forms of therapeutics it should not be employed indiscriminately, or by one not skilled in its use, or fully acquainted with requisite details as to strength, temperature, duration, etc., of the baths. And although natural waters may be preferable, as they are certainly of less trouble, he believes the results of the method will justify his faith in it, even when carried out by means of artificially devised baths.

Venetian Building, Chicago.

NOTE.—The sphygmographic tracings on page 722 were drawn from the originals, which will account for any inaccuracies which may occur.

PRINCETON UNIVERSITY.—The venerable College of New Jersey lacks little of holding the true status of a modern university. It has lacked a medical department hitherto, but we are informed that a movement is now on foot to establish a medical school in connection with old Nassau Hall.

OUR DIAGNOSTIC RESOURCES IN RECTAL AND ALLIED DISEASES.

Delivered by request before the Chicago Post-Graduate Medical School, Aug. 30, 1893.

BY JOSEPH M. MATHEWS, M.D.
LOUISVILLE, KY.
PROFESSOR OF PRINCIPLES AND PRACTICE OF SURGERY AND DISEASES OF THE RECTUM, KENTUCKY SCHOOL OF MEDICINE, ETC.

Before entering into my subject, the Faculty will permit me to thank them very cordially for the honor which this invitation confers upon me. Having been a teacher in a medical college for many years, the compliment is doubly appreciated as coming from another Medical Faculty, and one, too, that is the peer of any and all others. It is fit that the shoemaker should stick to his last, and I have, therefore, selected a subject for discussion to-night that may appear to you as being too simple for the occasion, but my apology is that it is the theme that has interested me, to the exclusion of others, perhaps of greater moment, for sixteen years. Then, too, I hope to interest you to the extent, at least, that you will admit it of sufficient importance to be considered.

OUR DIAGNOSTIC RESOURCES IN RECTAL AND ALLIED DISEASES.

I believe that you will agree with the statement that a diagnosis is of equal importance to the treatment in any and all diseases. Indeed, it is difficult to imagine one treating a disease correctly unless he has properly diagnosticated it. What a pity it is that our schools do not give more attention to the teaching of physical diagnosis, and more's the pity that we see, every day, people suffering and dying without a proper diagnosis having been made. Having given special attention for sixteen years to diseases of the rectum, it will not surprise you to hear that in that time I have met with many, very many cases that had not only been diagnosticated wrongly, but the treatment in consequence was not only incorrect, but engendered much suffering and distress, if not actually causing the death of the patient. I hope that it will not be inappropriate in this connection to recite a case that has just come under my observation:

A gentleman was referred to me by two well-known physicians of a neighboring State, for examination and treatment of his rectum. After a careful examination, I was able to decide that the patient was suffering from a well-defined carcinoma which began about one inch above the sphincter muscle and extended as far as the finger could reach. He was able, however, to have a daily evacuation of the bowels, as no strictured surface prevented, and that too with but little pain. A colotomy was not authorized, and the growth extended too high to be removed. Under the circumstances he was advised to go home and continue palliative treatment. This he did, but I was soon notified that he had fallen into the hands of other physicians who advised him to go to another city for treatment. Upon his arrival there, he wrote back to his former physicians saying that the surgeon said that he had seven large piles, and that after they were removed he could return home in ten days a well man. The operation was done and he was buried the following Monday.

Either the surgeon's diagnosis was wrong or he greatly deceived his patient. It has occurred to me several times to operate upon patients for cancer of the rectum where a diagnosis of piles had been given. Generally I have attributed the mistaken diagnosis to the fact that the physician did not make an examination, but in one instance, at least, the physician had ligated a portion of the cancerous mass, mistaking it for a hemorrhoid. It is no uncommon thing for a surgeon who does much rectal work to see cases of hemorrhoids, diagnosticated as prolapsus ani, or vice versa; benign ulceration of the gut, designated as malignant, or the reverse; a contracted, spasmodic sphincter, called a stricture; a retroflexed womb, made out to be a tumor of the rectum; or an enlarged prostate, called carcinoma. Nor is it a surprise to the surgeon to have cases referred to him as rectal, when in truth the trouble is a urethral or meatic stricture, or it may be a displaced ovary or pus tube. It has happened to me to see three women who had submitted to an ovariotomy, whose symptoms failing to clear up, had their trouble explained by detecting disease in the rectum or flexure. One woman was sent to me to have a large rectal tumor removed, when upon examination it was found that she suffered from a displaced uterus only. I have reported two cases of hypertrophied prostate, diagnosticated as piles. It is only necessary to refer to the fact that every day patients present themselves to the family physician for advice, having been informed that it is most important that they have some rectal "pockets" removed, which are slowly but surely endangering their health and mayhap their lives. Nor need I tell you that a great operation has been discovered, invented or found, truly national in character, called the "American" operation, which promises relief to the afflicted of whatever kind.

It is upon the supposition and the fact that these things are true, that I have selected my subject for this paper. True, you may say that such mistakes can only be made by ignorant men or pretenders. If your statement is true, then I will insist that much of your duty lies in the protection that you can or should give your clientéle. But my experience has taught me that your opinion is not altogether correct, if I am to anticipate it in the words already expressed. Many in the profession look upon the rectum as a fathomless pit and often let its affections go by without investigation, and many irregulars seeing this have been quick to see the chance and profit by it and enrich themselves. That they have made grave mistakes in practice, we can all attest, but it is our duty to correct the evil and not condone it. The main object, then, of this paper is to try to draw your attention more definitely to the importance of making a correct diagnosis in all rectal and allied diseases. By allied diseases is meant affections of other organs which, by continuity or contiguity with the nerve system as a medium of reflex, show symptoms through the rectum, but which in reality have their seat in other organs. One of the most harassing cases that I have ever met was that of a woman who gave the most pronounced symptoms of neuralgia of the rectum, yet no relief was ever afforded her until the coccyx was removed. You will agree with me that the rectum is the seat of many diseases. Hemorrhoids, both external and internal, affect the young, old and middle aged. Cancer finds the rectum a favorite seat and syphilis attacks it, often completely obliterating

and destroying it. A simple fecal impaction of the flexure or rectum may kill, if not diagnoticated, and many have lost their lives from hemorrhage from a capillary pile. Proctitis has often been mistaken for dysentery, and an ulceration (simple) in the sigmoid flexure, called cancer and left alone. You will permit me to try to clear up some of these, at least, in a diagnostic way.

METHODS OF EXAMINATION.

It is not at all necessary to have much paraphernalia, or many instruments, to make a rectal examination. With the finger and a good light, either artificial or natural, all, or most all rectal affections can be made out. Speculæ are generally cumbersome and do but little good; besides they are extremely painful to any diseased rectum. Indeed, I can not recall any rectal affection that can not be made out by the finger's touch, except one, when in reach of the finger. The exception is the one most commonly believed to be the most easily diagnosticated by the finger. I allude to internal hemorrhoids. Unless hypertrophied and made solid by plastic infiltration during an inflammatory attack, or hardened by atrophic change, they can not be *felt* when within the rectum, and indeed I have often thought that internal piles that did not protrude, needed but little if any attention, unless it be the ligaturing of a small bleeding tumor that was wasting the body by hemorrhage. If you will run over the list of rectal affections, I think that you will sustain me in the position that by touch alone, they can be diagnosticated. Polypi are easily detected; a stricture is readily felt; an ulcer quickly recognized; cancer, self apparent; syphilis, clearly traceable; fistulæ, external or internal, clearly seen or felt; an irritable sphincter responds quickly to the touch, and hemorrhage plainly seen; the prostate gland fully within reach, its anatomical bearings easily demonstrated and its pathology made manifest; pressure upon the rectum by a displaced uterus, quickly told; a fallen ovary generally within reach; a prolapsus ani seen without difficulty when extruded; an impacted fecal mass just within the sphincter easily felt. Of course, for determining a proctitis or other inflammatory condition in the rectum, a speculum examination is necessary. When natural light is not attainable, the electric small globe is an excellent substitute or the use of head mirror with Argand burner, as used by Kelsey, Cook and others, subserves the purpose well. The position of patient for rectal examinations should be either Sim's, on left side to gravitate contents of abdomen toward diaphragm, or on the back with knees held by Clover's crutch.

ANATOMY OF THE RECTUM.

The anatomy of the rectum must be taken into consideration in a diagnostic way. It is not my intention to enter into a description of its minute blood or nerve supply, but I would call your attention to the fact that it is abundantly supplied with each. Its vascularity predisposes it to inflammatory changes and its large nerve distribution accounts for many reflexes. I am firmly convinced that if the gynecologist and general surgeon, as well as the practitioner of medicine, would oftener look to the rectum as a source of reflex trouble, many vague troubles would be cleared up and many patients benefited thereby. I do not wish to be understood as advocating any wholesale or unwarrantable "*orificial* surgery," but simply to call your attention to actual diseased structures when they exist. I believe that when there is a structural change or a true pathological condition existing in the rectum, such condition may be the means of reflecting symptoms to neighboring or contiguous parts, but I do not believe, nor can it be substantiated that even if such change is found, it is, or can be, responsible for the many diseases that some hold and are, and that can only be, produced by an actual pathology in the parts affected. Dyspepsia, asthma, eczemas, neuralgia, etc., have a true cause, outside of any orificial conditions, and the short-sighted physician or surgeon who is lured into the belief that operations upon these outlets of the body will be of any benefit, will make a woeful mistake and inflict, perhaps, an irreparable injury upon his patient. In this connection I shall be permitted to insert a letter apropos to the subject, lately addressed to me by one of the leading physicians of Kentucky:

"I write to know what this new surgery is that warrants the cutting out (or off) of several inches of the rectum for some supposed or trivial affection. Two men came to our town a few weeks ago and operated upon a young girl (a friend of mine) who is, or was, in perfect health, save a little rectal irritation. The operation consisted in cutting deep down into the cellular tissues, and removing a ring and attempting to unite the upper and lower segments by first intention. Of course it was a failure. This was done five weeks ago. It is now healing by granulation and a stricture has resulted, for which dilatation is now being practiced."

If this whole subject were not really serious, it would be ludicrous, but inasmuch as unscrupulous individuals are playing upon the innocence or ignorance of the public, and by their pretense inflicting great damage and unknown distress, it behooves us as physicians to warn them at least of the danger. I am glad to add that this uncalled for and outrageous procedure has been, and is being denounced by all good surgeons.

Last Sunday I operated upon a very prominent minister from Texas, the object of the operation being to restore, if I could, a sphincter muscle that had been destroyed by the so-called "American" operation. He told me that he was a subject of asthma and had been advised to go to an institute in Chicago for treatment. The treatment (?) consisted of the removal of several inches of his rectum, and a circumcision. A stricture of the rectum followed the excision and he was anesthetized three times, and that cutting, breaking, etc., was practiced. Upon his discharge, or quitting the institution, he found a perfect inability to control his actions. This gentleman is in a deplorable condition, his occupation gone and he expressing a preference for death to the condition he is in.

In a late edition of the *Journal of Orificial Surgery*, published in this city and edited by a gentleman of rare ability, I find these remarks: "Orificial surgery is searching in its action; the effects of the work not only reach out to physical disorders but influence profoundly the state of the spiritual man, as by its aid the lame have been made to walk, the blind to see, the asthmatic to breathe, the dyspeptic to digest, the neuralgic to enjoy a relief from suffering and so on through the list of chronic ailments."

So we are to infer, from so distinguished an authority as the originator of orificial surgery, that all chronic conditions, wherever found, are directly traceable to the orifices of the body. Our text-books then go for naught, our pathology all wrong, physiology but a myth, and great authorities have written in vain. If you have witnessed the surgery done upon one of the outlets of the body, viz: the rectum, and have watched the results as I have in many cases, you will confess that the remedy is much worse than the disease, even granting that the disease was cured. I speak now more especially of the chronic ailments of the body, said to have been treated by the operation upon the orifice where no actual disease existed. Surely these men do not know of the great amount of harm being done by the disciples of such a doctrine. The orificial operation, or the so-called "American" operation, upon the rectum, consists in the removal of an inch or more of the mucous membrane of the gut, a modified Whitehead's operation. It is tedious of execution, attended with much hemorrhage, the effort to stitch the membrane to the true skin is often futile and the result in many cases an extensive proctitis, an ulceration, or a decided stricture, not to speak of incontinence, which follows the operation. I have many letters giving these results, and have had scores of cases under my observation suffering from one or all of these calamities. I therefore maintain that the operation is unwarrantable and untenable, and would respectfully call your attention to it for a full investigation. In a diagnostic way, I do not believe that the so-called "pockets" or papillæ have any significance whatever, as they have been demonstrated by Prof. Edmund Andrews of this city and other learned anatomists and surgeons, to be the rectal pouches (sacculi Horneri) and are normal structures. If, then, it is objectionable to remove these by clipping, etc., how much more unreasonable it is to remove an inch or more of the normal gut for the relief of chronic affections, as dyspepsia, asthma, etc. Kelsey says in the *Manual* for 1892, that whole opera companies are admitted into this same institution and subjected to the "American" operation for the purpose of improving their voices.

REFLEX IMPRESSIONS FROM THE RECTUM.

No one will deny that impressions upon other organs are received from the rectum by reflex action. This fact has been abundantly attested by the profession and many articles have appeared on the subject lately. It has been upon this hypothesis, doubtless, that the "orificial surgery" idea originated. That there is some foundation in fact for the theory advanced must be granted, but much false reasoning has resulted in many unwarrantable surgical operations, which have resulted disastrously to the patient.

To have reflex action in any case we must have certain and well-defined conditions. They are viz: *a*, afferent impressions resulting from the influence of a foreign body, or a pathological state, such as inflammation or ulceration, acting as an irritant upon afferent nerves, either in some part of their course or in their peripheric sites of distribution, whether such sites be situated upon the external surface of the body, or upon some part of one or another of the mucous surfaces within the body. Thus it happens that the determining cause may be associated with painful impressions, though in some instances such impressions may be more or less absent. Worms in the alimentary tract of the child, are just as likely, or more so, to excite to a spasmodic condition (general) than an affection of any outlet or orifice of the body. The second essential in producing nerve reflex is, *b*, that the afferent impressions (painful or non-painful) produced by the irritant or pathological state, should pass from the nerves conveying through them a related nerve center which, from one or other cause, chances to be in a state of exalted activity, and *c*, thence be reflected along one or other set of afferent nerves, so as to produce effects of this or that order. As afferent nerves are distributed to glands and to muscles (both involuntary and voluntary) reflex phenomena may show themselves in one or other of the two principal directions:

1. By the modification of the quantity or quality of some secretion.

2. By the production of spasmodic contraction in certain muscles, either of the involuntary or voluntary type. Under this process of reasoning, it can be easily comprehended how headaches, neuralgias, etc., can originate from an incoördination of the muscles of the eyeball; or an ugly ulcer in the rectum, especially one embracing the prostate, could make manifest symptoms of cystitis. But it must not be forgotten that the one essential to a reflex action is a pathological condition. Disease, or a change from the normal must exist, such as long continued irritation, congestions, inflammations or ulcerations.

At the meeting of the Ninth International Medical Congress, held at Washington, September, 1887, I had the honor to read before the Section of Anatomy, a paper entitled, "The Anatomy of the Rectum in Relation to the Reflexes." Up to that time, very little had been written on the subject, and the further I have pursued the subject, the more convinced I am of its importance, but we must not lose sight of the fact that our premises and conclusions must be based upon strict anatomical and scientific grounds. I will not bore you by attempting to give the anatomy of the rectum, but will make it suffice to say that a diagram of its nervous distribution is easily studied, its anatomical relations plain to understand and its pathology quickly recognized. With these to guide us, a diagnosis based upon a clear understanding of disease can be made out. I therefore regard the anatomy of the rectum, in relation to the reflexes, of the very greatest diagnostic value. Especially should it be borne in mind that, 1, disease and local irritation must exist in the rectum; 2, there must be an afferent nerve fiber; 3, a transferring center, and 4, an efferent nerve fiber, forming a reflex arc.

From the nerve supply of the rectum, it can be easily seen that pain would be manifest over the sacrum and coccyx in rectal disease. If disease is limited to the lower part of the rectum, the patient will complain of pain at the end of the coccyx. If disease is in the central part of the rectum, the pain will be in the center or lower part of the rectum, and when the disease is in the upper part of the rectum, the reflex will be in the upper part of same, in the innominate arch, etc. The location of the reflex, therefore, will indicate the part of the rectum involved, demonstrating that the nerves to any part of the rectum and to the posterior surface of the vertebral column opposite these, are given off from the

same point in the spinal cord, bearing the same relation as the nerves to a muscle and the skin over it.

Bearing in mind these facts, and also recognizing that by contiguity as well as continuity of structure, we can get a reflex impression, many vague conditions can be cleared up in a diagnostic way. In the male we are to remember that the prostate gland, bladder, urethra, inguinal gland; and in the female, the bladder, urethra, uterus, vagina, ovaries and tubes, are especially affected by pronounced rectal disease.

In this connection I will call your attention to the external sphincter muscle, as a factor to be considered in making a diagnosis of rectal disease, and also of its importance in a reflex way. My attention to this muscle as a factor in constipation, was first called by Dr. Rich. O. Cowling, deceased sixteen years ago, then Professor of Surgery in the University of Louisville. He believed that many cases of chronic constipation could be relieved by the free divulsion of this muscle. He, however, had never practiced it. Upon his suggestion, I tried the plan upon a few patients that would permit it and reported the favorable result to one of the medical societies. In the operation for internal hemorrhoids, I always precede it by a free divulsion of the muscle. Many cases that have suffered from the constipated habit have been relieved by the operation, and I have attributed the relief more to the divulsion of the muscle than to the removal of the hemorrhoids. It can be readily seen how this muscle could in a mechanical way interfere with the act of defecation, and in a physiological way prevent the peristalsis of the bowel which it greatly controls. It frequently becomes hypertrophied by the inflammatory process, and hence is not only easily irritated itself but irritates, when in this condition, all the other contiguous parts. The nerve supply of this muscle is greater than that of any other muscle of the body, which accounts for its great disposition to reflex action. The nerve supply coming from three different sources gives it a clear relation to all the neighboring parts. I have known a simple spasmodic action of the muscle to give rise to symptoms closely simulating proctitis, prostititis, cystitis and in a few cases urethritis, not to speak of reflected back ache, thigh ache, etc.

Children often suffer from a constipated habit, accompanied in many instances by extreme pain. The cause of such condition is often overlooked, and we are much indebted to Dr. Morton of St. Joseph, Mo., for an article entitled, "Fissure in Infants," as an overlooked cause of distress in the infant. The fact that such cases frequently existed was attested by Drs. Jacobi, Sadtler and myself, and the importance of their detection is shown in this valuable paper.

THE IMPORTANCE OF RECOGNIZING DISEASE IN THE SIGMOID FLEXURE.

For a number of years I have been investigating disease in the sigmoid flexure, and have recorded much of my experience in my book on "Diseases of the Rectum, Anus and Sigmoid Flexure," recently published. Much depends upon the early diagnosis of such cases. From its anatomical construction and situation, it is easily seen that disease there would be much more serious than in the rectum. Total obstruction can much more readily take place and the results prove much more disastrous than from like disease in the rectum. Any pathological condition, from a simple congestion to a malignant growth, may affect the flexure. If early detected, a congestion or an inflammation, can be easily abated, and yet if left alone or undetected, result in structural change such as ulcerations, strictures, etc., which renders the chance of cure very slim. The sigmoid has been successfully removed for cancer. But the success of treatment of disease here, either benign or malignant, depends entirely upon an early recognition.

I shall not enter into detail to prove that the flexure is a common seat of disease, but will take it for granted that it is acknowledged. Nor will I but simply suggest that it is but too infrequently treated, for to this fact, too, you will attest. Of the importance of an early diagnosis and treatment, I am sure you are convinced. The books are singularly silent as to both. It is a very common thing for all irritation in the flexure, either from congestion, inflammation or ulceration, with its coincident discharge and symptoms, to be diagnosed as diarrhea, dysentery, chronic catarrh, etc., and treated generally per mouth, when a proper recognition of the trouble would reverse the order of treatment and by a few injections into the flexure would relieve. I will make it suffice for illustration to give you the last case of the kind that has fallen under my observation:

Mr. J., aged 28, of full, robust habit was referred to me by his attending physician with the statement that the patient was suffering from a diarrhea, or dysentery, which he was unable to control after a treatment of four months. Upon questioning the young man, who was a civil engineer, he related that his trouble began about five months previous while out on the road, not violently at all but as a moderate looseness of the bowels, accompanied with some straining at stool. The discharge had never been watery but had always contained some mucus and blood. Although it would appear that this was characteristic of dysentery, he had never had an abnormal temperature nor had his appetite been interfered with, though he had not indulged it. In four months he had lost forty pounds of flesh and was growing weak. He complained of pain in the left side over the flexure, which was aggravated by pressure. An examination of the rectum revealed but little, yet as a rectal bougie was introduced into the flexure, pain was excited at its point, a disposition to tenesmus, and a desire to go to stool. The proper local treatment was given the flexure and the trouble disappeared in ten days.

I shall make it suffice to give the classification of disease found in the flexure, with the most important points looking to its proper diagnosis. There are two points that I would especially call your attention to in considering inflammation of the intestine: 1, the surface of the membrane will be more or less covered with a viscid, glairy mucus, containing pus and imperfectly formed epithelial cells, which may frequently be voided in the form of complete coats of the tube; 2, it is unusual for a chronic inflammation of the intestine to exist in adults without coincident ulceration. These two points will aid us materially, especially in differentiating between benign and malignant troubles of the intestine.

The following pathological conditions are found in the flexure: 1, congestion; 2, inflammation; 3, simple ulceration; 4, specific ulceration; 5, malignant ulceration or growths; 6, stricture, either malignant or non-malignant; 7, tuberculous ulceration. It is

of the utmost importance to diagnosticate each of these, and yet it will often prove to be a difficult thing to do. For instance, if a simple ulceration be mistaken for a malignant one, the proper cure or treatment is not likely to be afforded and, vice versa, if a malignant ulceration is mistaken for a benign one, time is given for such inroads as would render an operation useless.

Again, it is very necessary to recognize the difference between a *specific* ulceration, and that which is either benign or malignant, in order that the constitutional symptoms could be rapidly met. You will permit me, therefore, to devote a little time to giving what I consider some essential points in differentiation:

Congestion.—A distinction should be made in a pathological way between a congestion of the flexure and an inflammation, for the former can be relieved, when recognized, before the phenomena of inflammation has taken place. In other words, as soon as the irritation, which causes the distension of the blood vessels is removed, a normal condition is immediately assumed, when, if the inflammatory product is already thrown out, time must be given for its re-absorption. The symptoms attending a simple congestion of the flexure are very like those of an ordinary colitis, the only difficulty being to decide what part of the colon is affected. Very often a discharge of mucus alone, with or without a disposition to tenesmus, accompanied with slight pain over the flexure, is our only guide. A very simple local treatment quickly relieves these cases. I have seen patients discharge as much as six ounces of mucus a day from this simple condition.

Inflammation.—When a congestion has existed for a sufficient length of time to allow of plastic change, the condition is much more serious and difficult of cure. The symptoms are more marked, viz: those of reflex such as pain in the back, colicky pains in the stomach and bowels, often a localized sensation over the left inguinal region, a *great* amount of flatus, diarrhea, sometimes constipation, straining at stool caused by the feces passing through the inflamed flexure. The discharges often assume a dysenteric character, though not so apt to as when the flexure is ulcerated. These patients count themselves invalids and are often treated for chronic dysentery, though no rise of temperature is apparent. The most frequent cause of this condition is constipation, as the physiology of defecation will demonstrate. After the re-absorption of the watery constituent of the fecal mass takes place, the remaining dry mass acts as a local irritant which brings about the structural change with the coincident symptoms.

Simple Ulceration.—It requires but a step from the inflammatory stage for the changes of ulceration to take place. Indeed, whenever an abrasion takes place in the mucous membrane, the process rapidly advances. It is a much more serious condition than either of the other two, for it represents in ratio the third state of the inflammatory act or, more properly speaking, is the degenerative stage of the plastic deposit. As a result, not only do strictures form when an effort at repair is made, but the tissues may give way and perforation take place. It invites impaction and the reverse may be true, that impaction may be the cause. My experience is that impaction oftener takes place in the flexure than in the rectum and is much more dangerous.

The symptoms attending the ulcerative process in the flexure are plainly visible. In the congestive or simple inflammatory stage, the reflexes are perhaps mild; they are now well marked; the pain was slight; it is now well established; the discharge was principally mucus; it is now muco-purulent and bloody; the actions then infrequent; now frequent. There is great straining at stool and after each action a feeling of exhaustion; the desire for an evacuation constant but often nothing passes except large quantities of gas. The bowel never feels emptied; an uneasiness always in the abdomen. This condition of affairs leads the patient and often the doctor to suspect malignant trouble, as a rapid waste of flesh takes place and a bad color results, or perhaps a chronic catarrh is diagnosticated and the ordinary treatment given which accomplishes no good. By proper and careful local treatment of the flexure, the disease yields rapidly and kindly.

Malignant Ulceration.—The rules laid down for diagnosticating cancer are generally so explicit that the student thinks there exists but little difficulty in coming to a quick and correct conclusion, but the surgeon of experience admits that it is often a difficult problem to solve. The so-called infallible symptoms fade away as observation leads one to consider them. The disposition to bleed; the peculiar burning, or radiating pain; the odor which by some is said to be pathognomonic, each and all of them may be found absent, and the verdict after all has to be made up by the study of the clinical facts in the case. Even the reliable aid of the microscope on which many rely, will be found futile in the effort to decide the knotty question. Heredity, which many have so earnestly advocated and which is so generally believed to play its part in the affection, will be found of but little value to us in forming an opinion, and yet it is a life and death issue literally that faces us. If, then, these difficulties surround us in making out a malignant growth, when the trouble is plainly in view, how much more difficult is the problem when malignant disease is located in the sigmoid flexure and away from sight. That it is a favorite site for cancer no surgeon denies, and with the examples set us by such men as Bull, Lange and Bacon, we realize the necessity of an early diagnosis, in order that the flexure can be removed, for upon surgical treatment alone can any hope of a cure be based, when cancer exists in the flexure. The symptoms of malignancy in cases of this kind are very vague and misleading. The very best surgeons have made mistakes in this direction. It has not been many months ago since a gentleman in an interior town of Indiana consulted me for some supposed bowel trouble, and I gave the opinion that the disease was in the sigmoid flexure and would be the cause of his death. This opinion was concurred in by Dr. G. J. Cook who had seen the case some weeks prior. A short time thereafter, he consulted one of the most eminent surgeons in this country living in Chicago, who assured him that no such condition existed and that his trouble was largely imaginary. The patient died in a short time and an autopsy revealed a cancer of the flexure that had perforated into the cavity. The following cut represents the tumor removed by an autopsy made by Dr. Cook which verifies the opinion of Dr. Cook and myself in the case:

I contend that by palpation and the ordinary external methods of examination, a tumor can not be

diagnosticated in the flexure in a person who has a large abdomen if, indeed, it can in the ordinary sized abdomen, and that, granting a tumor *could* be made out, no significance could be attached that would indicate its nature except upon suspicion. As apropos to this subject, let me, at the risk of tiring you, relate a case that I saw with two able physicians not long ago:

The patient was an able-bodied German about 40 years of age, suffering from a total obstruction of the bowels. From the history of the case, his physicians had ruled out *acute* obstruction or intussusception, but they were unable to locate the point of obstruction. I suggested the administration of an anesthetic, and that I might be permitted to introduce my hand for diagnostic purposes. This was agreed to, and when the man was fully anesthetized two fingers were first introduced through the sphincter, then four, and finally the whole hand, the muscle plainly giving way. Pushing my fingers to the entrance of the sigmoid, I detected a well-formed cancerous growth which filled the flexure and nearly obstructed the opening. An immediate laparotomy was advised and was done. The two points which I wish to impress are: 1, that it was impossible to make a diagnosis here by external means; 2, that by the introduction of the hand it was quickly determined. In many cases, therefore, I believe that this procedure should be practiced. When we remember that cancer in the sigmoid may be so insidious as to be fatal without presenting but few, if any, of the ordinary symptoms of the disease, often the only symptom being obstruction, I believe that the introduction of the hand is the only means by which a correct diagnosis can be effected. It might be suggested that the rectal sound tube, etc., might accomplish the same purpose, but when it is remembered that an obstruction in the flexure can occur from other conditions, as impacted feces, foreign bodies, etc., it takes the *feel* or touch to determine the question.

Malignant tumor found in sigmoid flexure.

Tuberculous Ulceration, and Stricture of the Rectum.—I know of no disease or condition of the rectum that is more serious or that calls for a more decided diagnosis than does ulceration with consequent stricture. Much has been written on this subject and many of the points involved are yet mooted. In the general address on surgery, before the AMERICAN MEDICAL ASSOCIATION in 1891, which I had the honor of delivering, this was the theme selected. As my views expressed in that paper have received some criticism you will permit me here to make some reply, as the questions involved are mainly diagnostic ones.

It is no difficult matter to diagnosticate a stricture of the rectum; in the vast majority of cases it can be felt, for it is generally within reach of the finger. But granting that the upper part of the rectum is strictured and not the lower, instruments can be used for the detection, which is, however, seldom necessary. But it is a very difficult matter to tell the cause of said stricture, or to diagnosticate between the conditions set down as causes of this trouble. I did not in that article, nor do I wish now to appear dogmatic, but you will, I hope, allow me to express an individual opinion, even if it does differ with some of the authorities. The article objected, first, to the classification of stricture as given by some authors; as for instance I believed that "spasm" as a cause should be ruled out. If such condition ever exists which is to be doubted, it was merely from irritation and had no pathology of stricture in fact.

2. That congenital stricture should be classed as atresia, for the idea to be conveyed in writing of stricture is to deal with a pathological change of tissue.

I said that although it is frequently stated that dysentery is a common cause of stricture of the rectum, I had never seen a case of sufficient worth to convince me of the truth of the statement or, indeed, that it was a cause at all. To substantiate this belief, the following statements were adduced: Prof. John A. Ouchterloney, a distinguished pathologist and teacher, in discussing the subject said: "I call to mind a dead-house experience extending over many years. During the war I made postmortem examinations upon hundreds of cases who died of dysentery, the most malignant form of the disease as all will attest whose observations extend back to war times, and I can not remember to have ever seen a stricture of the rectum as the result of dysentery. In the two hospitals to which I was pathologist, there were eleven hundred and fifty beds and we sometimes made as many as five or six postmortems a day. After the close of the war I was for many years pathologist to the City Hospital, but in all my dead-house experience I never saw a stricture of the rectum caused by dysentery."

In dealing with dysentery as a so-called cause of stricture, I said that an ideal case for a pension would be when a soldier could show a stricture of the rectum, the result of dysentery contracted during war, and incidentally remarked that the Pension Office was singularly silent on that point. After writing my address, I noticed in the "History of the War of the Rebellion" that Surgeon General Woodward said: "Stricture resulting from dysenteric ulceration seems to have been much rarer than might have been supposed, and that *no* case has been reported at the Surgeon General's office, either during the war or since. That the Army Medical Museum does not contain a single specimen, nor had he found in the American medical journals any case substantiated by postmortem examination, in which this condition is reported to have followed a flux contracted during the Civil War."

Again, if dysentery is the common cause of stricture that some say it is, why is it that it is not more commonly met in people who have suffered with the disease in warm climates where dysentery is very common, indeed often epidemic, but how many cases of stricture of the rectum have ever been reported in this class by physicians who have had the opportunity of watching their cases for years? It might be suggested as a point in the etiology of stricture that dysentery does not, as a rule, expend its force in the rectum, but in the colon. If this be true, why is it that we do not have the *report* of cases of stricture in the colon, the result of dysentery? Whenever the effect of inflammation is expended in the intestines, it affects mainly the mucous membrane and not the submucous tissues. I submit, then, that these evidences are quite sufficient in my opinion, to make us careful in forming a diagnosis of stricture, especially in regard to its cause; as not only the treatment depends upon it, but also the life of the patient perhaps.

In the classification of stricture of the rectum, given by some, it is claimed that tubercle plays a prominent part. That we meet with tuberculous ulceration of this portion of the gut must be admitted, but it has not been my experience that a coincident stricture follows. The disposition of tuberculous tissue everywhere is to break down, and before the capacious rectum is filled by such deposit as to constitute a stricture, it will have assumed the ulcerative stage and given way. The only way that such tissue could originate a stricture, in my opinion, would be by cicatrization and such cases are rare, to say the least of them. In no instance have I ever seen a stricture of the *bronchi* from tuberculosis, and yet we recognize this as a favorite seat for tuberculosis. I regard the disease of but little diagnostic value in stricture of the rectum. The tubercle bacillus can, of course, be detected by the microscope.

Syphilitic.—By all odds the most common cause of stricture of the rectum is syphilis, not caused by direct inoculation or the extension of chancrous pus into the rectum, as formerly believed by some, and still believed by a few, but by a gummatous deposit, constituting a rectal syphiloma. Indeed, so well convinced am I that this is the method in which syphilis shows itself in the rectum that I have doubted whether chancrous pus ever caused a stricture of the rectum. Granting that such might originate a stricture, it could only occur by infecting the region of the anus and constrict by cicatrization of the sore. This would not be a syphilitic stricture of the rectum in fact. Therefore, as a point in diagnosis, it must be affirmed that the constriction is due to secondary, not primary causes. My table of cases demonstrates that as much as 50 per cent. of strictures are due to syphilis. Dr. Straus an eminent surgeon of St. Louis, says that the hospital reports of St. Mark's agree with this statement, he having lately examined said statistics.

Cancer is, undoubtedly, the second greatest factor in producing stricture of the rectum. I have never said, as has been attributed to me by one authority, that outside of syphilis and cancer, there could be no other cause of stricture of the rectum, for in my book on diseases of the rectum, I distinctly say that any irritation sufficiently long continued as to excite to a marked proctitis, especially with ulceration, might eventuate in a stricture, and cite several cases. But I did affirm, and do now reiterate, that these cases are rare compared with syphilis and cancer as causes. I did *not* say that if a case presenting, did not have cancerous stricture, that it was of necessity of syphilitic origin. What I did say was, that in a case presenting, if the question involved was whether the stricture was caused by cancer, and if it was decided that it was not malignant, then that ninety-nine times out of a hundred, it would prove to be syphilitic. Why? Simply that there is no stricture produced by other causes than syphilis, that resembles in the least a cancer stricture. Certainly then, trauma, simple inflammation or even dysentery do not in the least resemble a malignant or cancerous condition, while syphilitic stricture is so closely allied to cancer in its clinical aspect that it is often mistaken for it. Hence I said that if it was decided not to be cancer, in the majority of cases it would prove to be syphilitic and not a stricture from other causes, which is far from saying that if stricture was not cancerous, it was syphilitic. Therefore, I deem it of the utmost importance to be careful and positive in your diagnosis of a rectal stricture, for if the condition be diagnosticated malignant, when benign, you have greatly wronged and terrorized your patient; if a diagnosis of syphilis has been made when the stricture is due to other causes, I quite agree that a stigma may be passed upon an innocent person, but if you should diagnose a syphilitic stricture as a simple one, you will leave undone that which might wreck the life of a good man or an innocent woman. But I would rather err on the side of truth and if the truth hurts, you have but done your duty. No man believes in sentiment more than myself, but when sentiment comes between deception and truth in the prosecution of my professional duties, sentiment must get behind.

If I have given you any one point in your diagnostic resources of rectal and allied diseases, that is worthy of your consideration, and that may be of benefit to one single afflicted person, I am fully repaid.

FOUNDS A STATE MEDICAL LIBRARY.—Dr. Robert Battey of Rome, Ga., has presented to the State about 1,000 valuable medical works from his private library, asking that they be made the nucleus of a medical reference library in the State Capitol in Atlanta, the State's need of which he has often realized during his professional career.—*Chicago Tribune.*

RECENT OBSERVATIONS IN COLOTOMY, WITH CASES IN LONDON.

Read in the Section on General Surgery at the Nineteenth Annual Meeting of the Mississippi Valley Medical Association.

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Having had an opportunity recently, of seeing quite a number of colotomies performed at St. Mark's Hospital, London, I thought it would not be amiss to record my observations of some of the most important cases which I deemed worthy of consideration.

In the preparation of the patient, if time allow, and it is practicable, the bowels are relieved by means of purgatives and enemas, as this frequently obviates the necessity for the immediate opening of the gut. From twelve to twenty-four hours prior to the operation, the same preliminary preparation of the skin is made as for other abdominal incisions and an antiseptic dressing applied over the field for operation. Whenever there are no contra indications, chloroform is the preferred anesthetic, not that it is considered safer than ether, but because of many advantages afforded during the operation, for with it there is greater muscular relaxation, less frequency of respiration and tendency to cough than with ether, hence, the work is facilitated to that degree. Again there is not so much hemorrhage from the small arteries and veins. Mr. Richard W. Lloyd, the anesthetist, said to me, that he *preferred* ether, but that in abdominal surgery, he had often commenced with ether and found it necessary to change to chloroform. Whenever ether is given, Clover's small apparatus is used for its administration, and, as a rule, it is preceded by a few inhalations of gas. For chloroform, from fifteen drops to a drachm is sprinkled upon a piece of folded lint, about the size of a closed sheet of note paper, which is then held six or eight inches above the face during several respirations, and gradually brought nearer, until it forms a kind of dome over the mouth and nose, the edges falling lightly over the face, more chloroform being sprinkled upon the lint from time to time, previously to its being turned over. Patient's chest and legs are covered with blankets, over these a mackintosh and over this sterilized towels.

Left inguinal colotomy being the most frequently performed, I shall treat of it first. In this operation an incision two inches long and about one inch to the inside of the left anterior superior spinous process of the ilium and parallel with Poupart's ligament, is made through all the abdominal structures down to the peritoneum. All bleeding being stopped, the peritoneum is then divided and secured with a clip on either side, to prevent its being pushed away, and a small flat sponge, having a string attached, is now thrust into the abdominal cavity, to keep the intestines out of the way, and to catch any blood that might escape into the abdominal cavity while the parietal peritoneum is being stitched to the skin. The sponge is then withdrawn and a loop of the sigmoid is brought out through the opening and, when advisable, continuing to pull the intestine out from both the upper and lower angle of the incision until each end is made taut. A needle threaded with carbolized silk is then passed through the mesentery one-half inch behind the bowel, midway between the upper and lower angle of the incision, back through the mesentery, then through a fold of skin, on the outer edge of the opening, and tied. (Allingham.) Cooper, Edwards and Goodsall pass the mesenteric suture through the skin, parietal peritoneum, mesentery, parietal peritoneum and skin, then back through the same structures and tie. The prominent piece of gut, outside of the abdomen, is next made fast to the skin by five or six sutures, care being taken not to pass them through the mucous membrane of the bowel. The gut is then dusted with iodoform, green protective applied, and over this gauze, then a large pad of cotton and a broad, many-tailed flannel bandage completes the dressing.

The patient is then placed on his back in bed and, if there are no contra indications, with his head low and a pillow placed under his knees. Opium is given if pain is very great, or severe diarrhea begins. A soda and milk diet is given for the first day or so, and, if the patient is very weak, a little whisky is allowed. After the bowel has been incised, fish, toast, etc., is added. On the second or third day, or earlier if necessary, after the operation, an incision one inch and a half or two inches long is made in the intestine to permit the gas to escape, and on the following day an aperient is given. In about a week or fortnight, the bowels having been well emptied, patient is again chloroformed and the supplementary operation completed, which consists in removing the excessive gut.

Case 1.—R. C., age 28 years, admitted into St. Mark's Hospital May 6. Been troubled with constipation ten or twelve years, married for two years and has a nursing child nine months old; heart, lungs and kidneys healthy. Two years ago first noticed that there remained after stool a sensation as if the bowel had not been completely emptied, and frequently observed blood mixed with the excrement. This condition of affairs has continued to grow worse, and for the last six or eight months she has been annoyed with a constant desire to defecate and at each action passes mucus, blood and liquid feces only. Pain in the rectum and bearing down pains in the pelvis are very severe with each motion. She appeared very much emaciated. Examination revealed a cancerous mass in the rectum, painful to the touch, with a crater-like opening, involving the uterus, vagina, and almost occluding the lumen of the bowel.

May 9. Mr. Cooper performed left inguinal colotomy. May 11. The dressings were removed and the gut incised. May 12. Aperient given. May 13. Bowels acted through the colotomy opening. May 15. All sutures removed. May 17. Patient chloroformed and Mr. Edwards cut away the excessive portion of the intestine, about one-fourth of an inch above the incision. No clamp being applied, the hemorrhage was very profuse and difficult to control. Bowels acted from the upper opening. June 3. Patient discharged, relieved, and well pleased with the result.

I report the above, somewhat in full, because it serves to illustrate the usual course and result of the average case of inguinal colotomy.

Case 2.—Miss B., age about 18 years, schoolgirl. June 13. Left inguinal colotomy performed by Mr. Allingham for stricture and ulceration of the rectum. On pulling out the sigmoid it was found to be twisted upon itself. The mesentery being quite long, twenty inches of the gut were pulled through the opening and fixed outside of the belly wall. In this instance, the mesenteric suture was left rather long, to serve as a kind of guide in opening the gut. Usual dressing applied; bowel opened on the third day, and on the tenth, applied his clamp and completed the supplementary operation.

This was a case in Mr. Allingham's private practice, which he kindly invited me to see, and the huge amount of intestine removed (twenty inches) makes

it one of special interest. He recommends that where patients are likely to have a long lease of life, to remove all the intestine that can be drawn through the inguinal opening, but when the patient is very much exhausted from malignant disease, and not likely to live long, to be content with pulling out sufficient bowel to make a good spur; and from observations made in the out-department at St. Mark's, I am inclined to believe that the method of Mr. Allingham is to be preferred to that of those who advise pulling out the intestine from the upper angle of the incision and passing it in again at the lower, for in those cases in which the proximal and distal end of the intestine had been pulled out, until no more could be made to protrude, no prolapse or hernia was seen, but when this precaution had not been carefully taken, hernias and prolapses were frequently observed, and they are a source of constant annoyance, trouble and discomfort to the patient. Doubtless this supplementary procedure increases to a certain extent the seriousness of the operation, but if the patient's life is to be prolonged for a number of years this possible hernia must be prevented, or his future existence will be a very unhappy one indeed. Right inguinal colotomy is performed in very much the same manner as that of the left, except that the incision is usually made a little lower down and rather nearer to Poupart's ligament.

Case 3.—S. S., age 64 years. Constipation for twenty-five or thirty years. For the last six years has had occasional pain in the right side and groin. Two years ago noticed that blood was mixed with her motions. She now complains of incessant teasing diarrhea, great straining, and never obtaining relief during defecation. Examination revealed a movable tumor, with elevated edges springing from the left side of the rectum, which the finger passed well beyond. May 9. Mr. Cooper began left inguinal colotomy. Failing to find the sigmoid, cold water was injected into the rectum, when it was noticed that it passed into the right iliac fossa. The water was withdrawn, the opening in the left side closed, and an incision made in the right inguinal region, where the gut was readily found which was, presumably, the malplaced sigmoid. Patient was very restless during the night following the operation, retching, vomiting and complained of severe right abdominal pain.

May 10. Dressing removed, gut being very much distended; was immediately opened and a great quantity of flatus escaped. May 11. Supplementary operation performed. This colotomy was done preparatory to an excision, but being so well pleased with the result she refused to have anything further done, and was discharged June 10, relieved.

This case is of special interest: 1, because of the abnormality of the sigmoid; 2, because some authors maintain that, prior to an excision of the rectum, a preliminary colotomy is an important factor and very necessary to the welfare of the patient, while others would excise at once.

Lumbar colotomy is not nearly so frequently performed in the Allingham school (if I may be allowed the term) as the inguinal operation; however, it is done whenever indicated. The following case, because of the completeness of the obstruction, the great distension of the intestines and the necessity for the immediate opening of the gut, was considered a typical one for the operation:

Case 4.—Patient, age 52 years Average weight less than ten stone. On admission into St. Mark's was found to have a large cancerous mass, completely blocking up the rectum. Abdomen greatly distended, having a "doughy-like" feel, and outlines of the intestines could be seen and mapped out over it in several places. He measured thirty-six and one-half inches around the abdomen at umbilicus; four and a half inches above the umbilicus, thirty-seven and one-half inches; umbilicus to ensiform cartilage, eight and one-half inches; umbilicus to pubes, seven and one-fourth inches. Mr. Edwards who performed left lumbar colotomy in this case, made an incision three inches long, parallel to the last rib, and midway between it and the crest of the ilium; the center of which was rather more than half an inch posterior to a point midway between the superior spinous processes of the ilium. Bowel was stitched fast in the incision and opened at once, when a large basin of liquid feces were removed. Motions continued to pass through the opening and in eight days all distension gone and sutures removed. Discharged in six weeks, relieved.

Transverse colotomy is very rarely performed. Allingham, Bennett and Turner each reporting one operation.

Case 5.—B. D., age 32, was admitted into St. Mark's Hospital under the care of Mr. H. W. Allingham, who diagnosed his trouble as one of dysenteric stricture of the rectum, the extent of which could not be determined. Patient had the appearance of having been a very strong man. He resided in one of the tropical regions, and gave a history of having had a number of attacks of dysentery which, he said, had weakened and reduced him very much in flesh. No history of syphilis could be obtained. Apart from the symptoms caused by the stricture he complained of pain and soreness in his bowels, and pressure over the pelvic region elicited pain and tenderness. Mr. Allingham began the operation of left inguinal colotomy, but in coming down on the colon found it so bound down by adhesions, near to the middle and posterior wall of the pelvis, that it was impossible to pull it up into the incision. He, therefore, closed the opening and did the transverse operation, having ascertained through the first opening that the colon was fixed too far away to do a left lumbar operation. In this case the final incision was made one inch below the umbilicus and a little to the left of the median line, and here the transverse colon was so matted down that it could not be brought far enough into the opening to make a good spur. However, it was stitched fast into the incision, the result being a fecal fistula instead of an artificial anus. In about six weeks he operated upon him again for the fistula and slight contraction of the opening. Small incisions were made in the right, left and dependent sides of the orifice, the mucous membrane of the posterior part of the colon brought forward and stitched into the incision on the left side, hoping that it would unite and serve to direct the motions out through the opening. This gave way, however, and the purpose of the operation was defeated.

In submitting this case I am aware of the fact that it is a mooted question as to whether or not dysentery is a cause, or at least a frequent cause, of stricture of the rectum. Therefore, I desire to state in this connection that Dr. Woodward, U. S. Surgeon General during the late war, recorded no case of intestinal stricture resulting from dysenteric ulceration, and there is no specimen to be found in the Army Museum. While Dr. Joseph Ewart (Art. on Dysentery, Quain's Dictionary of Medicine) states that "if the ulceration involves a large portion of, or the whole circumference of, the mucous membrane, the subsequent contraction may produce dangerous narrowing of the caliber of the gut or stricture of the sigmoid or rectum." Mr. Cooper and Mr. Edwards in their book on "Diseases of the Rectum" state that "ulceration due to dysentery is another cause of stricture of the rectum, though opinions differ as to the frequency of such complication," and that, "in fatal cases of tropical dysentery, the morbid changes are sometimes found to extend from the cecum to the anus, and to be most severe in the sigmoid flexure and rectum."

Dr. Mathews, in his "Treatise on Diseases of the Rectum," says: "I have many times seen patients who gave a history of having had dysentery, and were treated for a long time for the affection; but a close scrutiny of the case revealed the fact that the so-

called dysentery was caused by an already existing stricture and ulceration, the rule here being reversed, that dysentery was the result not the cause." Again, he says: "The sloughing in these cases occurs from the gut *above* the rectum," and further: "I must confess that in searching for this as a cause, the road to a conclusion has not been plain enough for me to put dysentery in the list as a cause at all for *stricture* of the rectum."

These are the words, not only of the pioneer rectologist of America, but of a distinguished author and teacher, and one whom we honor for having done so much by his indefatigable perseverance, energy, close observation and contributions to elevate and place this very important branch of surgery alongside the other recognized and legitimate specialties of medicine and surgery.

In closing, I desire to state that my endeavors will not have been in vain, if some of the ideas or hints herein contained should prove to be of some little use to you; also that I have to thank Mr. Cooper, Mr. Goodsall, Mr. Edwards and Mr. Allingham for their kind consideration, attention and interest shown me, and for the many opportunities afforded for examining and observing cases of cancer, and other diseases of the rectum, under their care. I am, also, greatly indebted to the House Surgeon, Mr. Ryall, for numerous other privileges granted me in the hospital and out-patient department.

SYPHILIS INSONTIUM: A PLEA FOR THE RESTRICTION OF SYPHILIS, AND A SUGGESTION FOR THE PREVENTION OF ITS SPREAD.

Read by title in the Section of State Medicine, at the Forty-fourth Annual Meeting of the American Medical Association.

BY L. DUNCAN BULKLEY, A.M., M.D.
NEW YORK.

"Syphilis of innocents" has long since ceased to be the subject of satirical remark, and syphilis itself has long since ceased to be regarded as a purely venereal disease. Syphilis stands to-day as one of the most important diseases affecting the human race, and its study has occupied the thought and activity of observers almost more than that of any other malady, while its literature probably exceeds that relating to any other single disease.

The advances which have been made in the knowledge of the cause, manifestations and results of syphilis during the past fifty years are very great, and have done much to limit its extension by innocent means, and have also served to rob the disease of much of the terror with which it has been surrounded in earlier times. But with all the advances in our knowledge of the disease, and with all our present acquaintance with its pathology and our power of control over it therapeutically, syphilis stands to-day a menace to the public health which has not yet received the attention that its importance merits from sanitarians and jurists.

All are more or less familiar with the agitations which have from time to time arisen, especially in Europe, in regard to the restriction of the spread of syphilis; and the excitement caused by the discussion of, and final repeal of "The Contagious Diseases Prevention Act," in England in 1886 is still fresh in the minds of many. It is foreign to our immediate subject to discuss the arguments for or against any of the legislative enactments which have, from time to time, been made in various countries in regard to the regulation or control of prostitution, one of the chief incentives thereto being to prevent the spread of syphilis. But I can state, without fear of contradiction, that those who are most acquainted practically with syphilis realize strongly that some measure of control of the disease has been effected where stringent measures of inspection have been carried out, although all realize that at the best but a moderate control over it has been effected, even under the best systems thus far devised and executed, more or less perfectly.

As before stated, with syphilis in its relation to prostitution we have nothing to do in our discussion this evening, except so far as it may touch our subject of the "syphilis of innocents;" we approach the subject of the restriction of the spread of syphilis solely from this aspect, and argue for the control of the disease by health authorities wholly on behalf of the vast army of innocent sufferers from a disease which is absolutely preventable, provided the absolutely proper measures could be and were absolutely carried out. The proper measures for its restraint will never be instituted until the public is thoroughly alive to the relative frequency and importance of syphilis as a non-venereal disease, and the rights and claims of those who may be innocently infected thereby. The further elaboration of this subject will be our task this evening.

The subject of marital syphilis, which has been so elaborately and fully discussed by Langlebert,[1] Fournier[2] and others stands prominent in connection with the innocent acquiring of the disease. This has been so fully elaborated, and marriage is such a well-recognized factor in the spread of syphilis that we will not dwell long upon it here. While men occasionally contract the disease in lawful wedlock, even indeed from wives who have acquired it in nursing or in other innocent manners, it is principally the wives who suffer from the sins of their husbands, before or after marriage, and on them falls a large share of the burden of "innocent syphilis."

In a study on syphilis in females made by Fournier[3] five years ago, after a very careful analysis of his cases, he came to the conclusion that fully 25 per cent. of all females affected by syphilis acquired it perfectly honestly, in lawful marriage relations; and he stated that he believed the proportion would be much larger if the data of his notes had been more perfect. Ricord, in commenting on the statement of Fournier, said that his experience bore this out fully, only that the proportion was placed far too low. It is to be remembered that these figures related to Paris, and that fully one-half of the patients from whom Fournier drew the figures related to the *demi-monde;* among those who were married, after excluding a number of doubtful cases, he found that in 75 per cent. the disease was unmistakably traced to the husband.

In looking over my own notes of syphilis in public and private practice I should say that, as far as I can learn, fully 50 per cent. of all syphilitic females have acquired the disease in a perfectly innocent manner, while among the married females I have seen with

[1] Langlebert, La Syphilis dans ses rapports avec Mariage, Paris, 1875
[2] Fournier, Syphilis et Mariage, Paris, 1880.
[3] Fournier, Annales de derm. et de Syph., 1887, p. 757.

syphilis, in private practice, I am perfectly confident that the percentage of innocent victims is very much larger than even the highest figures of Fournier, and should place it over 85 per cent.

Surely then, from the aspect of marital syphilis, there is some reason for the plea that something should be done to prevent the wholesale infection of these innocent victims. It is impossible to form any estimate of the amount of mental and physical misery which has been thus inflicted in the marriage relations.

But if this aspect of our subject seems dark, and cries aloud for relief, that of *hereditary syphilis* is still darker and utters a yet more urgent plea.

The literature relating to congenital syphilis is very large, and it would seem that little was to be said after the elaborate works of Diday, Hutchinson,[4] Kassowitz,[5] Parrot,[6] Mauriac,[7] Fournier,[8] and many others, and we will but briefly touch upon this most important branch of our subject, which is more or less familiar to all.

We will first consider for a moment the effect of the syphilitic poison upon the viability of children born of syphilitic parents. I can not do better than refer to some very striking tables given by Sturgis in an appendix to Diday's book,[9] page 265; they are from the records of births of syphilitic children at the Moscow Hospital, Russia, from 1860 to 1870, inclusive. During these years there were 2,002 births, and 1,925 deaths, or 71 per cent. The same writer quotes statistics from the births occurring in the wards of Prof. Sigmund of Vienna, where, of sixty-one births fifty-nine are either still-born, or die within three months. Kassowitz[10] gives the percentage of still births of syphilitic parents at 33.6, and that of infants dying within six months at 24.3, a rather more favorable rate than that presented by other writers. The limits of our article prevent a further elaboration of this subject or a presentation of further statistics.

It must be mentioned, however, in this connection, that it is now a well-recognized fact that just as syphilis can *diminish* the viability of the product of conception, and so be a most frequent cause of abortion, even in the very earliest period of utero-gestation, so it is also a very frequent source of sterility, both in the male and female: of this, abundant proof could be adduced.

If, therefore, the effect of syphilis were limited solely to a destruction of life in the newborn, or in the products of conception, there would be a strong reason for the introduction of measures to prevent a spread of the dire disease. But, alas, this is but a very small share, indeed, of the ills wrought by syphilis in connection with generation. One feels almost like wishing that the effect of the disease might end there, that all the children of syphilitics might fail of life, rather than be born with the inheritance which often proves such a curse.

Tarnowsky[11] has recently given us the data concerning three families, in which there were a total of twenty-two births: of all these there came only one healthy adult man. Of thirteen who survived some years, eight were incapable of self-support, from mental or physical defects, and the other five were weakly, nervous, and totally unfit for further procreation. He states that the families in which this occurred belonged to the intelligent class of society, with no other cause than the syphilis for these disastrous results of conception. He quotes, further, from Tschistjkon the case of a man, who had severe syphilis in early life, destroying the palate, of whose nine children two were idiots, one was deaf and dumb, and one had died in infancy. The works of Hutchinson, and many others besides those already alluded to, give abundant testimony to the direful effects of syphilis on the progeny of those thus affected, which can be abundantly corroborated by all of us who have had much to do with the disease.

Thus the army of innocents swells in size and pleads for the restriction of a disease, which, it is now believed, may be inherited even to the third generation. What the later effect of syphilis may be, in the production of some of the conditions commonly known as scrofula, and in inducing race degeneration can not now be answered positively. But any one who has seen the shattered lives of some syphilitics can readily understand that such individuals would not be apt to produce particularly strong and vigorous offspring. So that from the standpoint of our national life there should be some check put to a disease which we know has decimated tribes of Indians, and has wrought havoc unspeakable in the Sandwich Islands and elsewhere.

But this is not all. We have not yet touched upon one of the most interesting portions of our subject, and one which pleads equally loud with the others for the restriction of the spread of syphilis; this refers to the *extra-genital* communication of the disease, or the acquiring of it by means wholly disconnected in any manner with the sexual act. This is a vast subject, which has been greatly developed of late years and one which may well occupy the serious attention of every physician and sanitarian.

Syphilis occupies a peculiar and unique position as a disease. Although belonging to the class of chronic affections, whose effects may extend over many years, its virus is one of the most energetic and quickly and surely operative of any known; cases are on record where external wounds, which have been exposed to the contagion of active syphilitic lesions, were washed and disinfected almost immediately and yet where the infection took place.

The individual with syphilis, then, is not only in danger of communicating the disease in marital relations, and almost sure to do so, and is also most likely to transmit more or less of the taint to the offspring, if they survive, but is also himself or herself a constant menace to society, by virtue of the contagious character of the disease, in some of its manifestations, even for a long period of time.

While our present argument is based entirely upon the non-venereal or innocent transmission of syphilis we can not forbear mentioning a single illustration of the harm which it is possible for one unrestricted individual to accomplish, in prostitution. Tarnowsky[12] states that one syphilitic woman who had come under his observation, had succeeded in

[4] Hutchinson, Diseases of the Eye and Ear Consequent on Inherited Syphilis, London, 1863.
[5] Kassowitz, Die Verseburg der Syphilis, Wien, 1876.
[6] Parrot, La Syphilis hereditaire, etc., Paris, 1886.
[7] Mauriac, Syphilis tertiaire et. Syph. hereditaire, Paris, 1886.
[8] Fournier, La Syph. heredit. tardive, Paris, 1886, and L'hérédite syphilitique, Paris, 1891.
[9] Diday, Syphilis in Newborn Children, etc., Syd. Soc. London, 1859
[10] Kassowitz, loc. cit., p. 122.
[11] Tarnowsky, Prostitution und Abolitionismus, Hamburg und Leipzig, 1890, p. 164.

[12] Tarnowsky. Cited in N. Y. Medical Record, March 9, 1889, p. 279.

contaminating no less than 300 men within a period of ten months; this represents merely the primary transmission of the disease, the later effects, which must have followed, on others, can hardly be imagined.

The duration of the contagious period of syphilis has never been fixed with any accuracy, and varies somewhat, as is known with the character and faithfulness of the treatment, and its duration. During the first year it can be most easily propagated; it is also abundantly contagious during its second year, and even up to the fifth year many cases are reported where the disease has been conveyed to others; how much later this is possible can not be determined with certainty, but instances are on record up to the seventh year or even later. What a fertile source of disease, then, is a single syphilitic individual, if for even two years he is capable of infecting others whenever a proper opportunity occurs! Any one who has had much to do with venereal clinics, and has seen how utterly reckless many of the patients with syphilis are, and how little they can be made to appreciate the dangers to which they expose others, even in their every-day family and industrial life, will fully appreciate the plea for the restriction of the disease.

Although syphilis has not yet spread in this country to any degree commensurate with that observed in some other lands, it will serve to illustrate our subject to quote from some recent reports from certain districts in Russia, where, as is well known, the disease will often be found to affect a large percentage of the population; much the same is true of Portugal and some other countries where syphilis has long been rife.

According to Ostroumoff,[13] syphilis prevails endemically in 90 per cent. of the villages of the Novgorod government, North Russia; the district just east of St. Petersburg. It is spread mainly in a non-sexual way, through infant feeding, family life, etc.

At a meeting of the Saratov Society of Medical Men, it was reported that the proportion of syphilitic patients (infected chiefly in a non-venereal manner) amounted to from 8 to 10 per cent. of the total number of patients coming under observation; the statement was made that: "An almost universal syphilization of the Government's population is to be expected in the near future."

Of 2,765 cases of syphilis reported at the general meeting of the Piarzan Society of Medical Men, Russia, in but 26 per cent. was the infection through coitus; in 5.4 it was from inheritance, in 2.2 per cent. from suckling, and in 63.3 per cent. it was from family life.

It is needless to give more illustrations, although literature is full of accounts of the extensive spread of syphilis through whole communities. After considerable research I have compiled a table of no less than one hundred and fifty episodes which could be called epidemics of syphilis; in many of these instances no figures are given, but only the statement that "*a large number*" were infected, but taking the lowest figures of those actually mentioned the total amounts to over 3,000 victims.

Happily, owing to increased knowledge of the disease, these instances of the extensive spreading of syphilis in special localities are becoming more and more rare, but a study of the literature of the subject shows that individual instances of the transmission of syphilis by innocent means are multiplying greatly, and that there is a real danger from unrestricted syphilis. Some of these peculiar dangers we will now study.

Coming now to the special consideration of the third division of our subject we will consider more particularly the extra-genital transmission of syphilis.

The methods by which non-venereal syphilis may be acquired are innumerable, and relate to almost every conceivable circumstance and surrounding of life. As each new case, or series of cases, is reported, it becomes more and more probable that the number of instances in which syphilitic infection has thus occurred is far greater than is commonly supposed.

With a poison so virulent, and capable of being transported and introduced in so many different ways, endowed with the possibility as far as is known, of being preserved for an indefinite period, the only wonder is that cases of non-venereal syphilis are not even more common than they are now known to be. When the conditions for its entrance are present, namely, a solution of continuity of surface and material from a person in an active stage of syphilis, are present, it will be seen that inoculation rarely fails to take place on any and every portion of the body.

Of the two methods of communicating the disease, the *immediate* and the *mediate*, the former is by far the more common, and is the mode in which most cases of venereal syphilis are acquired. Mediate transmission, while much less frequent, is, in one sense, much more important, because of its insidious character; the source of infection often being unsuspected, until long after the disease has become fully developed in the victim. A large number of cases of innocent syphilis occur through mediate infection, although very many are also caused by immediate transmission, as in kissing, biting, in the infection occurring between nurslings and infants, etc.

The limits of this article forbid any full consideration of the topic of the extra-genital transmission of syphilis, but in order that the far-reaching danger of the disease may be rightly understood, the principal features of this branch of our subject must be presented.

For convenience of study we have divided the acquiring of syphilis by innocent means into three main classes of cases:

1. Syphilis economica, which relates to the extension of the disease by family and industrial relations; *2. Syphilis brephotrophica*, where the disease is communicated in connection with the nutrition and care of infants; and *3. Syphilis technica*, where inoculation takes place from, or in connection with bodily service, principally that relating to the care of the sick.

Under the first class there are a vast number of separate data, relating not only to the ordinary utensils of common life, cups, spoons, pipes, etc., but also to various articles of clothing, towels, sponges, syringes, etc., likewise to tooth brushes, pins, etc. Among the industrial pursuits in which syphilis has been communicated may be mentioned, glass-blowers, assayers, weavers, musicians, conductors, housemaids, cooks, laundresses, furriers, upholsterers, druggists, artificial flower makers, clerks, cashiers and others.

Brephotrophic syphilis has furnished the largest

[13] Ostroumoff.

share of cases, and must ever be an object of the greatest interest. Fournier[1] has said most forcibly: "Nothing is so dangerous to its surroundings as a syphilitic infant. The thousand cares which relate to its bringing up, the kisses and caresses given to it serve as the origin of ready and frequent contamination. To speak only of facts observed by myself, I have on my notes a dozen instances of contagion of this sort. Thus for example, a grandmother, aged 65, was infected by her little granddaughter whom she fed with a spoon, touching the spoon each time to her own mouth before giving it to the child; the virus was certainly thus transmitted from the lips of the infant to her own. I have also had under my care a young woman who was infected by her own infant who had contracted the disease from a wet nurse.

"My learned colleague, M. Hillaird, has related to me the following: a young man with syphilis married prematurely, and shortly infected his wife. Their child soon showed signs of hereditary syphilis and infected its nurse. The child being then committed to the care of its maternal grandparents inoculated both of them by means of a nursing bottle; they were in the habit of putting the nipple in the mouth, tasting it before giving it to the baby, and both acquired chancre of the lip." Literature is full of instances of brephotrophic infection, many of them much more striking than these.

The third subdivision relating to *syphilis technica* is also most interesting, and furnishes a very large number of instances of syphilitic infection in connection with body service. The cases fall under the three heads of 1, the operator, the victim; 2, the operator, the syphilific; and 3, the operator, the medium.

Hundreds and thousands of physicians and accoucheurs and midwives have been inoculated in the honest practice of their calling, as probably all present can recall one or more instances with which they have been acquainted. Vaccination has furnished large numbers of cases of innocent syphilis in times past, and among other modes of propagating the disease may be mentioned tattooing, circumcision, skin-grafting, cupping, breast-drawing, wound-sucking, cleansing the eye with the tongue, as also the use of dental instruments, the Eustachian sound, minor surgical operations, etc.

But all this brief and hurried mention of the modes of infection conveys but to a very slight degree any idea of the real facts in regard to this branch of our subject, as it has been developed to the writer during a study of the subject for the past ten years. The amount of material collected has exceeded all expectation, many times, and together makes a mass of evidence of the dangers attending the disease which can not be gainsaid or neglected. In the digests of literature which have been prepared, appear records of many thousands, or even tens of thousands of cases where the individual has contracted the disease as innocently as would be the case in regard to smallpox, yellow fever, or diphtheria.

From what has preceded it may be readily understood that syphilis is a disease which presents no little danger to the public health, and to that of every individual. While undoubtedly an exaggerated idea of the perils connected with it might possibly be obtained, there is little danger of error in this direction. No amount of reasoning or argument can do away with the facts which are known with regard to the disease, and which may be proven from the very highest medical authorities.

Syphilis is now one of the principal diseases which affect the human race, and is undoubtedly on the increase, owing to the utter want of sanitary control over it in the larger part of the world. Unfortunately, owing to the same reason there are but few reliable data showing its relative presence in different parts of the world. Something may be learned from the army reports, but in most instances this source of information is not available, inasmuch as reference is usually made only to "venereal diseases," and not syphilis specifically.

4 East 37th Street, New York.

[1] Fournier, Syphilis et Mariage, Paris, 1880.

THE BEST FORM OF CYLINDER TEST AND VARIABLE PRISM, WITH A NEW PHOROMETER.

Read in the Section on Ophthalmology, at the Forty-fourth Annual Meeting of the American Medical Association.

BY EDWARD JACKSON, A.M., M.D.

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We are all familiar with the Maddox rod or cylinder test. Doubtless many have used it in connection with some form of rotary prism, and Dr. Prince of Springfield, Ill., has combined the two in a convenient phorometer. But both the cylinder test and the rotary variable prism are capable of development into forms of greater practical value. The cylinder test belongs to that class of tests for heterophoria in which binocular fusion is prevented by dissimilarity of the images; the one image being distorted by a very strong cylinder, the Maddox glass rod, placed before one eye.

The line of light seen by the eye before which the rod is held, varies in length with the diameter of the rod employed, and the distance at which it is held before the nodal point of the eye. In the forms that I have seen, the rod being of small diameter, the line is comparatively short, unless the rod be held very close to the eye, closer than is convenient in practice.

Mr. Maddox has proposed (*Ophthalmic Review* 1893, p. 39) the use of several pieces of a rod one-eighth of an inch in diameter placed side by side and their ends fixed with sealing wax. With such an arrangement, however, we do not obtain a single continuous line, but a series of short lines which together constitute a broken line. The reason for this, is that where the complete rod is employed, the light does not pass through the margin of the rod, on account of the obliquity of the surface in this part, but only reaches the eye through the central portion.

The rod, as it has been commonly supplied in this country has consisted of one-half of a glass rod of about one-fourth of an inch in diameter; or of a concave cylindrical surface, having about the same curvature, ground out from a plate of glass. The concave cylinder must always be inferior to the convex, because with the former the length of the line diminishes as the cylinder is moved from the eye, occupying the full width of the rod or cylinder surface only when it is placed at the nodal point of the eye; while with the latter, the line occupies the full width of the cylinder surface when placed at its

focal distance in front of the nodal point of the eye and, it being needful in all cases to place the cylinder some distance in front of the eye, it is only with the convex cylinder that its full width becomes available.

The part of a cylinder that can be used for the purpose of the test is, however, always considerably less than one-half of the complete rod. Take the case of a plano-cylinder with the flat surface placed towards the source of light, and the convex surface towards the eye; assuming the rays to be parallel and to fall perpendicularly on the plane surface, the refraction is all at one surface.

The deviation produced in a ray increases as the position of the ray is removed from the center according to the law of the sines. The sine of the angle of refraction being equal to the sine of the angle of incidence multiplied by the index of refraction of the glass. This increase of deviation continues until a point is reached, where the sine of the angle of refraction becomes the sine of 90 degrees. That is, until the light passing out of the surface becomes tangent to it, beyond which no light can emerge. If the index of refraction be that commonly possessed by optical glasses, a little over 1.53 the angle of the incidence that gives emergent rays tangent to the surface, is about 40°, 50′. Therefore 81°, 40′ is the largest segment of a cylinder that can be of any possible use for this purpose. In order, however, to reduce the thickness of the glass I have chosen to use only 60 degrees of the circumference of the rod.

If the cylinder be placed so that its principal focus lies at the nodal point of the eye, the whole angle subtended by it will be occupied by the streak of light that we desire to obtain. If it be removed farther from the eye, the streak will still occupy the whole width of the glass, but this will subtend a smaller angle. On the other hand, if it is brought closer to the nodal point than its focal distance the angle subtended will remain about the same, or diminish slightly on account of aberration, the line no longer occupying the full width of the cylinder. It follows, therefore, that the most favorable position for the cylinder is that at which its focus will fall on the nodal point of the eye.

As commonly employed in the cylinder test, the rod is placed about fifteen or twenty mm. or a little more from the nodal point. Hence the cylinder that can be used to best advantage is one that has that focal distance. I have, therefore, chosen the segment of a rod or cylinder of 10 mm. radius, employing a portion of it, 10 mm. long by 10 mm. wide. Such a cylinder gives a line of light double the length obtained where the ordinary quarter inch rod is placed in the same position.

The weakening of the cylinder used makes it applicable for the test to be presently referred to, at the distance of ordinary near work.

The other portion of the instrument that I to-day present, is the Rotary Variable Prism. Suppose we have a prism placed in a certain position, which we will call the primary position, and then rotate its base in the plane bisecting its refracting angle. In the primary position, the full effect of the prism is produced in a certain direction, as this is departed from its action is in some other direction, but we may regard it as replaced by two components, one exerted in the primary direction, the other perpendicular to it. The relation of these components to each other, and to the original power of the prism is the relation of the cosine and sine of an angle to each other and to radius. That is, the component in the direction of the primary position diminishes as the cosine of the angle of departure from that position. The component perpendicular to the primary position increases as the sine of the angle of departure from that position. This is illustrated in the accompanying Fig. 1.

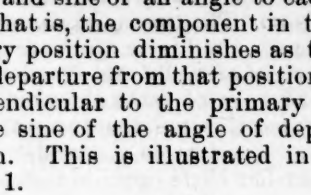

Fig. 1.

Thus we have two variable components; one in the direction of the primary position, the other perpendicular to it, either of which can be used for the purpose of the variable prism. So far as I know, the variable perpendicular to the primary position and increasing as the sine of the angle through which the prism is rotated, is the one that has always been employed.

It is liable to these objections that, starting from zero its increase is at first most rapid, gradually becoming slower and slower, until at the perpendicular it ceases. This necessarily arises from its relation to the sine of the angle. Its disadvantages have doubtless occurred to every one who has used the rotary prism. Where the greatest delicacy and exactness is desired, delicacy and exactness are most difficult to obtain; with the strong prismatic effects when more rapid change would be convenient, the increase is slowest. On the other hand, the diminution of the cosine of an angle and the corresponding diminution of prismatic effect in the direction of the primary position is slow at first and then increases in rapidity, reaching its maximum when the angle reaches 90 degrees. On this account the component diminishing with the cosine is decidedly superior to the one that has heretofore been employed. Its application will be referred to presently.

Whichever component is used it becomes necessary to get rid of the other unless the other can, from the nature of the case, be disregarded. The ordinary method of eliminating the undesired component is by using two prisms and causing them to revolve in opposite directions, so that the undesired component of one prism shall just neutralize that of the other, and the net result be the sum of the components of both prisms in the desired direction.

In combining the variable prism with the cylinder test it is, however, quite unnecessary to resort to any means of getting rid of the undesired component. This will always be perpendicular to the axis of the rod or cylinder and in the direction of the length of the line, so that a slight shifting in this direction merely brings a slightly different part of the line opposite the light image of the other eye. The combination, therefore, of two rotary prisms with the cylinder test is unnecessarily complex. The single rotary prism perfectly answers the purpose.

If it is desired to use the positive component (the increase of prismatic effect perpendicular to the primary position and proportioned to the sine of the angle of rotation) the primary position must be with

the base parallel to the axis of the cylinder, so that all its effect is produced in the direction of the line of light perpendicular to that axis. Then as rotation is made either way, there is developed an increasing prismatic effect in the direction of the axis of the cylinder and perpendicular to the line of light; which prismatic effect carries the line of light to the light image, as seen by the other eye. This effect, as has been pointed out, of course increases most rapidly at first and more slowly later.

If, however, it is desired to use the other component, the prism must be placed with its base perpendicular to the axis of the cylinder, so that it will exert its effect in the direction of that axis. It must be borne in mind that the variable must start at zero. To utilize the diminishing component, therefore, the prism in its primary position must be neutralized by a fixed prism. Then as the rotary prism is turned, the variable prismatic effect diminishes leaving unneutralized the effect of the fixed prism. The more the rotary prism is turned from its primary position, the more the effect of the fixed prism is felt. This effect increases as the cosine of the angle diminishes.

In using the combination of rotary prism with the Maddox rod, the fixed prism may be ground on the rod as is done in the instrument presented. Then, when the rotary prism is in its primary position, the prismatic action of the rod is just neutralized; as the rotary prism is revolved, the prismatic action of the rod comes more and more into play until at 90 degrees the rotary prism exerts no influence in the direction of the axis of the rod, and the full prismatic effect of the rod is attained.

Revolving the rotary prism still farther, the cosine of the angle of rotation begins to increase, but in the opposite direction, so that the effect produced by the rotary prism is now added to the prismatic effect of the rod, until finally at 180 degrees the prismatic effect produced in the direction of the axis of the rod is equal to the sum of that of both rod and prism.

For this purpose, I have chosen a rotary prism of five centrads, with an equal effect of the rod. It will be noticed that, leaving zero, the index has to sweep through a space of over 18 degrees before the first quarter centrad of prismatic effect is produced, and almost 37 degrees before one centrad is reached. Continuing, the change becomes more rapid until we reach five centrads, the full effect of the rod, at 90 degrees. Passing on, the change again becomes slower until the maximum of ten centrads is reached at 180 degrees. Precisely the same effect is produced and in the same direction, whichever way the prism is rotated from the primary position. With such an instrument, the lowest degree of heterophoria can be measured with most minute accuracy. Of the scientific advantage of this there can be no question, and my experience indicates it is of practical value.

On the other hand, the employment of the simple rod or cylinder and the placing of the rotary prism perpendicular to it, allows one to produce a prismatic effect either way in the direction of the axis. so that when this is placed horizontally, either exophoria or esophoria can be measured without altering the position of the instrument or, in the same way, right or left hyperphoria when the axis is vertical.

I have had this combination of cylinder test and variable prism mounted, so that it could be used in the ordinary trial frame or in a handle held before the eye. With the cylinder test it is unnecessary to have any leveling instrument, since the images are not displaced, but their fusion opposed by their dissimilarity.

Before leaving this subject it may be worth while to note that to use the variable component proportioned to the cosine for the ordinary rotary prism, such as Risley's, it is only necessary to place the primary position of the rotary prisms where they will act together instead of neutralizing each other; and then to neutralize them both in this position by introducing a third prism of double strength; thus instead of using two rotary prisms of fifteen centrads each, to use two rotary prisms of seven and one-half centrads and neutralize them by one fifteen centrad prism. It seems to me that this modification of the rotary prism will make it a much more satisfactory instrument, especially for the lower degrees of deviation.

With the forms of rod test heretofore employed, the great strength of the cylinder made it impossible to use any test object except a point of light and, therefore, practically precluded the use of a rod test for ascertaining the balance of the ocular muscles at the near working distance. The weaker cylinder that I have adopted allows the recognition of a dim, but very characteristic streak when a black dot upon white paper is looked at, at the ordinary working distance, so that the instrument is as applicable for testing the balance of the ocular muscles at the near point as at a distance. It furnishes a ready practicable means of measuring heterophoria at the reading distance, or for testing the balance of the ocular muscles in different portions of the field of vision, something of which I have often felt an urgent need.

One may properly hesitate about asking the attention of the profession to a new device, but the present instrument seems to justify itself because it does the work more exactly; because it has wider range of application, and because it is at the same time more simple and less expensive than its predecessors.

SELECTIONS.

Report of the Surgeon General of the Army.—We give below a synopsis of the Report of the Surgeon General of the Army for the fiscal year ending June 30, 1893. The report begins with a statement of the disbursements from the appropriations made by Congress for the support of the Medical Department of the Army. It then discusses at length the various points which are here briefly outlined:

Army Medical Museum.—The total number of specimens received during the fiscal year was 1,038; total number of specimens in the Museum June 30, 1893, 32,265. The Museum is represented at the World's Columbian Exposition at Chicago by a display of specimens including models of hos-

pitals, of a railway train for transportation of wounded, and of hospital steamers; also a series of pathological specimens illustrating tuberculosis and tumors, a series of ninety sections of human embryos, a series of 346 photo-micrographs and a series of microscopes illustrating the history of the instrument, with other apparatus.

Library.—There were presented to the Library during the year, 633 books and 7,981 pamphlets and journals. Total number of books now in Library, 110,653; of pamphlets, 173,100.

Volume XIV of the Index Catalogue, including from "Sutures" to "Universally," forming a volume of 1,016 pages, has been completed and is now in the printer's hands.

Providence Hospital.—933 patients were admitted for treatment during the year, the average number treated per day having been 104.

Army and Navy General Hospital, Hot Springs, Arkansas.—Thirty officers and seventy-five men were admitted during the year. Sixty per cent. of these affected with rheumatism were returned to duty. Three times as many men could be treated in the course of the year as are received.

The commanding officer recommends that electric light be introduced in place of gas, and that increased accommodations be provided for officers, in both of which recommendations I fully concur.

Medical Officers.—The following changes occurred during the year:

Deaths: One deputy surgeon general with the rank of lieutenant colonel: one surgeon with the rank of major.

Retirements: One surgeon general, with the rank of brigadier general; one assistant surgeon general with the rank of colonel; one assistant surgeon with the rank of captain. (Capt. James A. Finley. Act of Feb. 8, 1893.)

Promotions: One deputy surgeon general with the rank of lieutenant colonel, to be assistant surgeon general with the rank of colonel; three surgeons with the rank of major, to be deputy surgeons general with the rank of lieutenant colonel; two assistant surgeons, with the rank of captain, to be surgeons with the rank of major; four assistant surgeons, with the rank of first lieutenant, to be assistant surgeons with the rank of captain.

Appointments: One deputy surgeon general with the rank of lieutenant colonel, to be surgeon general with the rank of brigadier general; James A. Finley, late captain and assistant surgeon to be assistant surgeon with the rank of captain, Feb. 13, 1893, with rank from Nov. 10, 1879. (Act of Feb. 9, 1893); twelve assistant surgeons with the rank of first lieutenant.

Resigned: One assistant surgeon with the rank of captain; one assistant surgeon with the rank of first lieutenant.

Commission Vacated by New Appointments: One deputy surgeon general, with the rank of lieutenant colonel.

Vacancies: There are now five vacancies in the Medical Department.

The establishment of an Army Medical School in the city of Washington, D. C., was authorized by General Orders No. 51, A. G. O., June 24, 1893, for the purpose of instructing approved candidates for admission to the Medical Corps of the Army in their duties as medical officers. The course of instruction at this school will extend over four months and will be given annually, beginning on the first day of November. It is believed that great benefit will be derived by supplementing in this way the college courses of the young men accepted for appointment.

Hospital Corps.—The authority of the Secretary of War, given in General Orders No. 25, 1892, to enlist from civil life into the Hospital Corps, and the Act, approved July 13, 1892, raising the pay of Hospital Corps privates from thirteen to eighteen dollars per month, have greatly benefited the Corps by enlarging the sphere of selection and offering better inducements to good men to enter its ranks.

There were in service June 30, 1893, 122 hospital stewards, 79 acting hospital stewards and 585 privates, 58 of the last serving with the companies of instruction, and 527 on duty with troops and at military stations.

A comparison of the men trained in the companies of instruction, with the members of a detachment locally selected and instructed, is generally to the advantage of the former. As to promotion by competitive examination, there is no doubt that this system has had a marked effect in elevating the standard of proficiency, bringing the intelligent, able and ambitious men to the front and giving to the Corps as its non-commissioned officers its most efficient and capable members. It is considered that in the education of the Corps greater benefit has been derived from drills, which are practical object lessons, than from lectures. Only the men ambitious of promotion have benefited from lectures. Company bearers have shown but little interest in their special work. A satisfactory equipment for the Corps is a matter of some difficulty, as its members may be sent on field service at one time with an infantry and at another with a cavalry command. This, however, will be settled satisfactorily in progress of time.

White linen or cotton duck is recommended as the most suitable wear for men occupied in ward or dispensary duties.

HEALTH OF THE ARMY.

During the past year the health of the Army has been excellent. Perhaps at no time heretofore has the Surgeon General been able to invite attention to a better record of health and consequent efficiency, and this although the rates have been materially increased by an undue proportion of sickness among the Indian companies.

The admission rate per thousand of strength was 1,270.42 as compared with 1,364.78 during the previous year and 1,459.65 during the preceding decade. The lowest recorded admission rate, 1,247 in 1887, is practically the same as that now reported. The number and duration of the cases were equivalent to a non-effective rate of 39.60 as compared with 42.01 during the previous year and 43.41 during the preceding decade. The non-efficiency may be expressed also by the statement that each officer and man of the Army was on an average sick for 14.5 days during the year, as compared with 15.3 and 15.9 days respectively during the previous year and each of the years of the previous decade. The number of men discharged for disability was 18.35 per thousand of strength as against 17.23 (the lowest annual rate to which these discharges have been brought) in the previous year and 30.70, the average of the ten years preceding. The death rate from all causes was 6.44, comparing favorably with 8.05 and 8.75 respectively for the previous periods already mentioned, as well as with 6.33 for the year 1889, the lowest annual death rate hitherto reported. Excluding deaths from injury the deaths from disease were equivalent to a rate of 4.36 per thousand of strength, as against 5.03 and 5.81 respectively for the previous year and decade, and against 3.95 for the year 1889.

As causative of non-efficiency, injuries take first place in the records of the past year, having occasioned 8.12 of the total of 39.60 constantly on sick report per thousand of strength. Venereal diseases take second rank as a disabling cause, 5.33 men per thousand of strength having been constantly under treatment on their account. Specific febrile diseases, respiratory and digestive diseases and rheumatism (including muscular) had each a non-effective rate of 3.3.

The absolute number of discharges for disability, which gave the rate of 18.35 per thousand of strength, was 493, of which 67 were for rheumatism and diseases of the bones and joints, 58 for injuries, 53 for consumption, 53 for venereal diseases, 44 for epilepsy and insanity, 44 for diseases of the heart and circulation, 27 for diseases of the eye, 14 of the ear and 21 for hernia.

The absolute number of deaths was 173, of which 56 were caused by violence, 20 by consumption, 17 by pneumonia, 15 by diseases of the nervous system, 13 by typhoid fever, 13 by diseases of the heart, 8 by diseases of the kidney, 6 by influenza, and 3 by alcoholic poisoning.

Health of the Military Departments.—The admission rate was highest, 1,515.50, in the Department of the East; but all the other rates found their maximum in the Department of Texas; death rate from disease 7.43, from all causes 11.48; discharge rate for disability 27.68; rate of non-efficiency 54.25. The latter department must therefore be credited with the least satisfactory record. The Department of the Columbia had the lowest admission rate, 772.73, non-effective rate 27.88 and death rate from all causes 3.67; but the Department of California had only 1.54 deaths from disease and the Department of the Platte 12.32 discharges for disability per thousand of strength present during the year.

Of the posts having bad records during the year, three had the admission rate over 2,000 per thousand of strength, Fort Hamilton, David's Island and Columbus Barracks; four ranged from 2,000 to 1,900, Fort Barrancas, Washington Barracks, St. Francis Barracks and Fort Reno; three from 1,900 to 1,800, Fort Marcy, Mount Vernon Barracks and Fort Supply, and two from 1,800 to 1,700, Forts Monroe and Ringgold. Of the posts having the highest non-efficient rates three reported 70 and over per thousand of strength, Columbus Barracks, and Forts Barrancas and Ringgold; four ranged from 70 to 60, Forts McIntosh, Reno, Yates and Clark; and nine from 60 to 50, Forts Bayard, Sam Houston, McPherson,

Jackson Barracks and Forts Marcy, Canby, Custer, Wayne and McHenry. The causes of the high rates at most of these posts have already been indicated briefly. Excluding the recruiting depots, arsenals and smaller posts, Fort Barrancas may be regarded as presenting the worst record. In 1889 and prior years this post had rates rather lower than the average. Since that year they have been unusually high, mainly caused by diarrhea, alcoholism and diseases of the integuments.

Exclusive of the smaller posts and arsenals those posts having the best admission rates were Fort Spokane with 518.52, and Forts Washakie, Missoula, Niagara and Sherman, with rates ranging from 600 to 700. The best non-efficient rate, 15.48, was reported from Fort Mackinac. The rates ranged from 20 to 25 at Forts Washakie, Wadsworth and Missoula, Benecia Barracks and Forts Warren and Huachuca.

Cholera.—In anticipation of an invasion by this disease, on account of its prevalence at some of the European ports largely concerned in the shipment of immigrants to this country, medical directors and post surgeons were duly reminded, by means of a circular on preventive measures, of the precautions requisite for the protection of our military stations. Fortunately, however, the imminence of the danger subsided by the gradual extinction of the disease at the quarantine of the port of New York, and it became evident that several months would probably elapse before similar threatening conditions would recur. Influenced by the circular from this office, medical directors on the return of warm weather again notified their subordinates of the importance of giving special attention to local sanitary conditions.

Typhoid Fever.—One hundred and fifty-one cases, of which fourteen were fatal, were reported. Isolation, disinfection and a careful supervision of the water supply checked the progress of the disease, so that only at a few posts were there more than one or two cases. Fort Reno had twenty-three; Madison Barracks, nineteen.

Influenza.—Of this disease 1,793 cases were reported, the largest number at any one post having been 141, one fatal, at Fort Custer, Mont. Many posts reported no such cases, but these had usually an increased rate for catarrh and bronchitis. A total of six deaths was ascribed to this disease.

Malarial Diseases—were not unusually prevalent. Washington Barracks and Forts Sill, Myer and Clark had high rates. The water supply at the two last named posts is believed to be concerned in the prevalence of autumnal fevers; efforts are being made to improve these supplies. Fort Brown, Texas, continued free from malarial fevers during the year.

Venereal Diseases.—Columbus Barracks had the highest rates; admission 292.72 and non-efficiency 18.54 per thousand of strength. The improvement noted in last annual report has not been kept up at this recruiting depot. A fall in the rate to 266.20 in 1891 from 380.46 in 1890, and 462.44 in 1889, suggested hope for the future which is not sustained by the rates now recorded. Fort Ringgold, Jackson Barracks and Fort McPherson follow Columbus Barracks in the relative frequency of their cases, 208.97, 198.11 and 195.48 respectively; but Fort McIntosh takes second place in order of non-efficiency with a rate of 15.47, while Fort McPherson and Jackson Barracks follow with 13.67 and 12.16.

Alcoholism.—The rates compare favorably with those of the previous year.

Suicide.—Twenty-two cases are reported.

Influence of Age, Arm of Service, Nativity and Length of Service on Liability to Disease.—During the year some interesting observations were made on the influence of age, arm of service, nativity and length of service on the susceptibility to disease. Men from 30 to 50 years of age are less liable to become sick than younger or older men. The economy of enlisting young men and of limiting the period of service to ten years is by no means sustained by these observations.

The Indian prisoners are well cared for at Mount Vernon Barracks, Ala. Improved sanitary conditions are manifesting their influence in lessening the prevalence of diarrhea among the children and consumption among the adults.

THE SANITARY CONDITION OF THE ARMY.

Quarters.—Great improvements have been made during the past few years in the character of the quarters provided for the Army; and the officers of the Quartermaster's Department are entitled to great credit for their earnestness and intelligent efforts to have all work of this nature carried out in accordance with advanced sanitary views. Nevertheless, it appears to me that when any important work of construction, alteration or repair is under consideration it would be well to have on record the views of an officer of the Medical Department on any sanitary questions involved. In many instances the medical officer has a special knowledge of the locality in its sanitary bearings that is too valuable to be overlooked. I desire, therefore to urge the recommendation, made on several previous occasions by my predecessors in office, that the plans of all buildings hereafter to be constructed, of alterations to be made, or of sanitary improvements to be instituted at our military posts be submitted to a board of officers, one member of which shall be a medical officer. The construction and improvement of our military posts are matters of so much importance as to merit their consideration by boards of officers before commencing work on plans drawn up by an individual. Moreover, on account of sanitary considerations connected with the selection of site, construction of barracks and other post buildings, with their heating, lighting and ventilation, drainage, sewerage and water supply, the Medical Department should be represented on such boards. It is better to build well from the first than to have to make alterations in a completed structure, for these are always expensive and seldom satisfactory. The approval of a board before final action is taken would tend to eliminate mistakes and lessen the need for future changes.

The buildings at a few of the posts are old, dilapidated and leaky. The makeshift sanitary arrangements at Fort Keogh should not be permitted to continue unless the post is likely to be abandoned in the early future. Among its many needs are roomy and well ventilated quarters for the troops. The best of the officers' quarters at Eagle Pass, that occupied by the commanding officer, is not so good as the quarters ordinarily provided for a non-commissioned officer at any other post. The quarters of the men have ample space and good ventilation, but the roofs leak and the walls have to be propped to prevent them from falling outwards. All the occupied buildings at Fort Custer are old, with the exception of one set of quarters and the guardhouse. The barracks, particularly, are much dilapidated; they can not be kept comfortable in winter. As the abandonment of Fort Whipple has been in contemplation for some time few repairs have been made to the buildings and the post presents a worn and dilapidated appearance. The buildings are wooden, decidedly overcrowded, and ventilated only by the doors and windows. With few exceptions all the buildings at Fort Yates are old and poorly adapted for the purposes for which they are used; but they are in as good sanitary condition as it is possible to have them in view of the uncertainty as to the continuance of the post. The barracks are loose-jointed and cold in winter, permitting the entrance of cold winds and snow. Storm doors and double window sashes were provided on the recommendation of the post medical officer. Damp, cold and unventilated casemates continue to be occupied as quarters at Forts Warren, Wadsworth and Adams. These are not only undesirable but unhealthy. The quarters occupied by married enlisted men at some of our posts are wholly unfit for occupancy. Those at Fort Yates are described as wretched. Casemates are occupied at Fort Warren where, from the chill dampness and bad air the children are anemic and shows signs of rachitis. At Fort Grant these quarters are in bad repair and crowded to the point of indecency. At Fort Vancouver they are reported as scarcely habitable, built on ground honeycombed with disused privy pits and cesspools. At Fort Missoula the old log huts thus occupied should be destroyed, as also some shanties owned by a civilian and rented to married soldiers. The best of these, constructed by the soldiers for themselves and families, at Fort Du Chesne, are of logs, but most of them are of scrap lumber eked out with condemned canvas and old coal oil cans, the rooms without flooring, small, damp and dark. Sanitary improvements can not be instituted at the expense of the occupants, and at present there are no means of effecting them in any other way. Quarters like those at the posts mentioned are breeding places for disease; and as garrisons become larger the problem of quarters for the married soldiers is likely to become more complex. I recommend a return so far to former methods as to provide public quarters for a limited number of married men in each organization, all others being strictly prohibited from having their families at the post. A provision of this kind would be regarded as a privilege awarded to deserving soldiers, and would permit the whole of these huts and shanties to be destroyed.

In reporting on the severity of the winter season at some

of our northern posts, medical officers have criticised the allowance of fuel. Captain Clendenin, at Fort Brady, has represented that an officer exposed to all the rigors of a severe winter has to expend from twelve to eighteen dollars per month for fuel to keep his quarters comfortably warm, while his more fortunate comrade stationed in milder climate, is exposed to neither the inclemency of the season nor to the expense of protecting himself and his family against it. I commend this subject to the consideration of higher authority.

Some medical officers have called attention to the practice of flushing the floors of quarters, dormitories, dining halls and other occupied rooms for the purpose of cleaning them. This is an unsanitary practice which should be prohibited by commanding officers. Floors when lightly stained and waxed can easily be kept clean, dry and wholesome.

Disposal of Garbage, etc.—The usual method is to collect in closed barrels or galvanized iron pails and transport to a dumping ground in the vicinity of the post. For convenience, ground near the inhabited area is selected, and the accumulations of years become so extensive as to be a nuisance and a reproach. Ashes and cinders may be utilized on roads or in filling, and if not required for such purposes their deposit is not injurious. Stable manure also can generally be used upon gardens; but there is at every post much unavoidable solid waste that should be destroyed and a crematory of moderate size should be built at all the modern and permanent posts. Where the reservation is small and surrounded by civil communities it is imperative to dispose of the wastes in this way. There need be no uncertainty as to the efficiency of garbage crematories; they have proved successful in many instances.

Water Supplies.—The subject of water supply has been agitated earnestly during the past year at many of the posts, with the result in most instances of carrying out or instituting improvements. The water wagon is now practically a thing of the past. It exists only at Fort Du Chesne and Eagle Pass. At the former it brings water from the Uintah River; at the latter from the hydrants of the neighboring town.

Food.—The food supply has been reported ample in quantity and of excellent quality. The few exceptional cases in which some article of the supply is made the subject of unfavorable criticism serve merely to emphasize the excellence of this provision for the well-being of the soldier. Moreover, most of the references to inferior quality have their origin in the naturally poor condition of Western beef cattle at certain seasons.

Clothing.—Medical officers generally appear to be satisfied with the clothing of the men, as unfavorable criticism has been exceedingly rare. Those stationed at Camp Eagle Pass and Key West Barracks desire a lighter quality of woolen underwear for the men. J. Y. Porter, M.D., attending physician at the latter station, holds that his long professional experience in that climate has demonstrated the necessity for wool as a texture for underwear; but the articles should be of light weight, otherwise they will be uncomfortable and irritating. He considers that "feather weight" all wool undershirts and drawers would not be any more expensive of purchase than those now furnished, and would more decidedly conduce to the health and comfort of the men. He thinks it likely that if light woolen articles are not provided the men will purchase for themselves the cheap gauze stuff, which does not possess the property of preventing rapid evaporation from the body when bathed with perspiration, and which consequently tends to the production of those diseases that arise from chilling of the surface.

On the other hand, the post surgeons at Forts McPherson and Brady take exception to the drawers issued, as lacking in the necessary warmth for winter wear. Colonel B. J. D. Irwin, Assistant Surgeon General, characterizes the issue at Fort Brady as unsuitable, inasmuch as it is too light for winter and too rough for summer wear, the drawers and undershirts especially so; and Captain P. Clendenin protests against the use of cotton drawers at this post. "The underclothing should be of wool and of good quality to protect a man on guard duty when the temperature falls at night to 30 degrees F." It is understood that thick woolen drawers are now supplied to the troops in Northern Dakota.

Habits, Cleanliness, Athletic Exercises, etc.—The habits of the men are generally reported good. At some posts, as Fort Grant, reference is made to the evil influence of low resorts bordering on the reservation, where drunkenness and prostitution impair the morale of the men. Similar resorts in cities near military stations do equal harm to the troops. The remarks submitted in presenting the data relating to the prevalence of venereal diseases and alcoholism, give a statistical expression to the habits of the men in this view of the question. The habits of men of the Indian companies are reported as bad, by all the medical officers that have been connected with them. They are represented as dissipated, quarrelsome and dirty.

Bathing Facilities.—At a few posts the facilities for bathing continue to be somewhat defective, but much has been effected of late in bettering them. The poorest arrangements are probably to be found at Camp Eagle Pass, where the bath-house, a hospital tent pitched in an arroya, is furnished with only one tub. Some barrels are arranged to give a shower, and this is preferred by the men to the tub. In summer, scarcity of water, and in winter the coldness of the weather, prevent regular bathing at this post. Some of the men are therefore wanting in respect to cleanliness of person, and skin diseases are said to have resulted.

Laundry Work.—The laundry work of the men is usually carried on by the wives of married soldiers living in or near the garrison, or by laundrymen in the neighboring civil communities. A laundry for the depot of Jefferson Barracks is managed by the Depot Quartermaster, and its charges fixed by the Council of Administration. This method of doing the laundry work is to be recommended, particularly in view of danger from cholera or specific febrile diseases.

Post Exchange.—Medical opinion, at first generally in favor of the institution as tending to lessen the frequency of intoxication, appears of late to doubt the soundness of its earlier conclusions. Many medical officers now consider that the comparative infrequency of absolute intoxication is offset by the facilities afforded to young men to indulge in beer drinking. They are of opinion that old men habituated to the use of distilled liquors will not be satisfied with beer, but will get whisky at other places than the Post Exchange, while young men who would not leave their barracks for intoxicants of any kind are led into bad habits by the ease with which beer may be obtained and the official sanction given to its use.

Recruiting.—Number of applicants accepted, 9,585, or 38.3 per cent. of the 25,012, the total number; rejected on primary examination 58.3, and declined 3.4 per cent. Diseases of the eye were the most prolific causes of rejection, having been found to a disabling extent in 8.5 per cent. of the applicants. The average age of the men accepted for service was 25.39 years, height 67.43 inches, weight 145.35 pounds, measurement of chest at expiration 34.16, at inspiration 37.02, expansibility of chest 2.86 inches.

Of every hundred of these recruits 68.3 were native Americans; white 57.6, colored 8.6, Indian 2.1. Of the foreign born men 9.4 came from Ireland, 9.2 from Germany, 3.1 from England, 2.2 from Canada, 1.6 from Sweden, and lesser percentages from other countries. About two hundred and fifty different callings or occupations were recorded on the enlistment papers by the recruits accepted during the year.

Recommendations.—The introduction of electric light into the Army and Navy General Hospital, Hot Springs, Ark., and an increase of the accommodations for officers at that hospital.

White linen or cotton duck as the most suitable wear for men occupied in ward or dispensary duties.

The reference of all plans for the construction or alteration of buildings or of other sanitary improvements at military posts, to a board of officers in which the Medical Department shall be represented.

The disuse of casemates as living and sleeping rooms.

The providing of suitable quarters for married enlisted men of the Army.

A consideration of the want of equity in the present method of heating the quarters of officers.

A prohibition of the practice of flushing barrack floors with water for the purpose of cleaning them.

The construction of crematories for garbage at all permanent posts, particularly when the reservation is small and surrounded by civil communities.

The establishment of post laundries at large posts to obviate the necessity of sending clothes to various localities in neighboring cities or other civil settlements.

Blank Applications for membership in the ASSOCIATION, at the JOURNAL office.

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SATURDAY, NOVEMBER 11, 1893.

REPORT OF THE SURGEON GENERAL OF THE ARMY.

SURGEON GENERAL STERNBERG'S Report for the year ending June 30, 1893, has just been made public; but there will be some delay in its issue on account of the preparation of engravings to accompany CAPTAIN LA GARDE'S paper on the "Effects of Gunshot Injury with Small Caliber Projectiles." The report is a valuable one, not only as a record of the statistics of sickness and death, for the year, in the Army, but as representing the various conditions at military posts which tended to increase or limit the spread of disease among the garrisons. Under the heading of "Sanitary Condition of the Army," the condition of barrack buildings as to air space, ventilation, heating and lighting, the subsoil drainage and the disposal of garbage, waste water and excreta are considered, particularly of such posts as have been the subject of criticism on any of these points. Water supplies, also, are fully discussed and the connection between this important sanitary provision and the health of the garrison is shown in several instances that are full of interest for the health officer and practical sanitarian. We refer to another page of this issue of the JOURNAL for a synopsis of the SURGEON GENERAL'S Report.

MEDICAL COLLEGES AND STUDENTS.

All the medical colleges in the United States are now in operation, with the exception of eight. The number of students in this city is about the same as last year, while there is a slight decrease elsewhere, the result, no doubt of the financial panic of the last six months. In looking over the Announcements for the sessions of 1893–94, it is gratifying to observe, not alone the improvement in their general appearance, but the more dignified and professional tone that pervades them. There is less advertising of the superior attainments and qualifications of members of faculties, of unrivaled equipment and facilities for instruction, of the unparalleled growth and success of institutions, etc. It is also notable that the requirements are yearly becoming more stringent, and more in accord with the growing intelligence of the age. The number of schools requiring four annual courses of lectures is increasing; the same is also true with those requiring three courses, so that the two course schools are beginning to be the exception. It is also noticed that the equipment of many of the schools has been improved during the past year, and the facilities for clinical instruction much increased. The outlook in this country is hopeful, and the stigma that has hitherto rested upon American medical education promises to be soon removed.

KEELEYISM DISSOLVING.

The *London Lancet* and the *Medical Press* denounced Keeleyism and the gold cure over a year ago as quackery of the worst stamp, and followed it up in several issues with very strong condemnations of this scheme. As a result a suit for libel was begun, KEELEY giving bonds for the costs. These actions for libel were telegraphed all over the country as news, and the inference made clear that this so-called great discoverer of bichlorid was going to defend his reputation, and work for humanity, and legally show his claims as one of the few immortals. Timid editors who had ventured a doubt as to his claims and methods, hesitated and became silent. A few medical editors grew more defiant and kept up a steady fire, but some of the wiser ones withdrew all notice, finding opposition as good an advertisement as praise.

The lawyers for KEELEY very adroitly tried some new plans, one of which was to have the testimony of the discoverer of bichlorid taken by a commission, and thus avoid a troublesome cross-examination. This was refused and they carried the case to a higher court, where it was decided that the plaintiff in these actions must appear in person.

Such examination should be in open court, and would necessarily cover a large field of science, morals and ethics, and sundry other allied topics. After a prolonged consideration it was ascertained that the great discoverer of bichlorid was so overwhelmed with medical and business interests, that he could not appear in this little matter, so the suit has been abandoned, and the costs are extracted from the bond, (the law so wisely provided for). We extend congratulations to our esteemed brother editors of the *Lancet* and *Medical Press*, for this event. For no one could predict the result had the plaintiff been able to come over and appear in this suit. In this connection our friends will be interested to hear that this somewhat startling scheme of curing inebriety in three weeks, by a secret specific, has reached such

proportions as to actually explode; or, more accurately, to lose coherence and break up into a multitude of similar schemes, each one claiming to have discovered the real cure and true method, and denouncing the others as impostors.

In this little city of Chicago, there are six distinct "gold cures," and probably more, all differing, and all claiming cures numbering into the thousands. Our English brethren will see at once that the business of curing inebriety in this country is far more important than punishing editors for skepticism and doubt.

By-and-by, when these modern benefactors, with their patent stamping out and curing processes, have used up all the material in this country, they may go over to London, and our friends may have another chance to express themselves. In the meantime, the dissolving process of rank charlatanism will go on, dying from the ignorance on which it is founded. No truth in science is ever sustained by secrecy, or suits for libel, or built up by the assertions of irresponsible persons.

The medical press had made elaborate preparations to defend their suit, and had gathered a collection of facts relating to Keeleyism and its founder, which they promise to publish in the future. This material will probably find its home in the British Medical Library, and in the next century furnish data for a history of the quackery of this age, the same as data of "Berkinism" a century ago is read with such curious interest now. A fact rather startling in this abandoned suit, is that much of the expense of gathering facts against the plaintiff are considered costs of the suit and must be paid out of the bond which he gave. This is unfortunate to men of uncertain reputation, who appeal to the law for help and defense. The presence of the gold cure quackery and the consumptive cures, now so widely advertised, is additional proof of the need of a public analyst who shall examine and control the proprietary medicines offered for sale. In Germany and France all medicines of this character are examined and registered before they can be sold. This will be done in this country at an early day, from necessity and as a sanitary measure.

HEALTH OF THE MILITARY DEPARTMENT OF THE MISSOURI.

The annual report of COLONEL B. J. D. IRWIN, Medical Director, Headquarters Department of the Missouri, Chicago, Illinois, for the fiscal year ending June 30, 1893, has just been published. The posts in the department are Forts Brady, Mackinac and Wayne, Michigan; Fort Sheridan, Illinois; Forts Leavenworth and Riley, Kansas; Forts Reno and Sill, Oklahoma Territory, and Fort Supply, Indian Territory. Camp Oklahoma, Oklahoma Territory, was abandoned during the early part of the year. The mean strength of the Department was 3,344 men; admission rate 13.03 per thousand of strength; non-effective rate 37.4 per thousand; death rate 3.59 and rate of discharge for disability 19.14; average number of days' sickness for each man of the mean strength, 13.7. These rates are all somewhat lower than the corresponding rates of the army as a whole, and considerably lower than the rates of the Department for the previous year. Fort Sill, as in former years, leads in the number of cases of malarial fevers, 145; Fort Riley following with 94 cases, while Fort Reno reports 34 cases of typhoid fever, as against only 5 cases last year. Fort Sheridan reports the largest number of cases of diarrhea, 118, as well as of diseases of the respiratory system, 97. Four cases of cholera morbus are reported from Fort Reno, two from Fort Sheridan and one from Fort Wayne. Fort Brady shows the largest percentage of cases of alcoholism with Forts Mackinac and Wayne next in order. Forts Mackinac, Brady and Leavenworth appear as the healthiest posts in the Department; Forts Reno, Sill and Supply as the most insalubrious.

There are now in the Department, twenty-three medical officers: one Colonel, IRWIN; five Majors, TILTON, BROOKE, GIRARD, BROWN and TURRILL; nine Captains, GARDNER, CORBUSIER, APPEL, BANISTER, CARTER, GORGAS, WYETH, IVES and CLENDENIN; and eight Lieutenants, GLENNAN, SNYDER, BROOKE, WARE, BREWER, NEWGARDEN, STRAUB and KENNEDY. Two new hospitals were completed during the year. One to accommodate from forty to sixty patients at Fort Sheridan, Illinois; the other to accommodate from twelve to sixteen patients at Fort Brady, Michigan. They were constructed by the Quartermaster's Department of the Army, and have recently been occupied by the invalids of the garrisons of those stations. Concerning the hospitals, COLONEL IRWIN observes that as he has not had opportunity to examine them since their transfer to the Medical Department, he is unable to pronounce upon their condition or fitness for the purpose for which they were designed, but he has reason to believe that they will prove most desirable and valuable for the sick. The manufacture of ice has been carried on during the whole year at Forts Sill and Reno, Oklahoma Territory, and at Fort Supply, Indian Territory, during the greater part of the year. The scarcity of water at Fort Reno has recently caused the discontinuance of the ice product at that place, much to the inconvenience of the whole garrison, ice having now to be procured from Kingfisher, at much trouble and increased cost to those able to purchase it. The extreme heat of that region and the bad character of the water supply taken from the south branch of the Canadian River render the use of ice an absolute

necessity to those obliged to live at that station. Much time and money has been expended in useless efforts to secure for that post a supply of good potable water. Little progress has been made during the year in boring the artesian well, and it is questionable if success will result, as the depth to which it is to be driven is limited to fifteen hundred feet, twelve hundred of which have been bored without finding more than one indication of water and that is said to have been a saturated solution of gypsum.

There were no active campaigns by the troops in the Department during the year; but companies from posts in the territories were frequently sent into the field to expel intruders from Indian lands and reservations. In such cases, when practicable, the troops were provided with medical officers, detachments of the hospital corps, ambulances and medical supplies.

THE MAN WITH TWO TONGUES.

"Nay, said I, the gentleman is wise; certain, said she, a wise gentleman; nay, said I, he had the tongues; that I believe, said she, for he swore a thing to me on Monday night, which he forswore on Tuesday morning. There's a double tongue; there's two tongues."—*Much Ado About Nothing.*

We are accustomed to read curious accounts of wonderfully scientific discoveries, and extremely skillful surgical operations in the columns of our esteemed contemporaries the lay press, and occasionally a blood-curdling account of some new reptile or sea monster, a living calf with three heads, or a feathered freak with three legs; but it has been reserved for a reporter of one of the New York dailies to report the actual discovery of a man with two tongues, a condition which has always been figurative in literature rather than real. The following is the paragraph:

"The Tenderloin District has developed a freak of nature puzzling to physicians. WILLIAM SENNER of 237 West Thirty-First Street, an apparently healthy printer, with a wife and family, has grown a second tongue. It is located just below the tongue he was born with, and is quite well developed and natural in its appearance. Several physicians who have examined the growth think it is superinduced by constant pipe smoking. MRS. SENNER says it is a punishment for using profane language. An examination will be made to-day by physicians for the purpose of deciding upon an operation."—*New York Press*, October 28.

We have no doubt that the physicians are very, very much puzzled, but it is all owing to the failure of the reporter to enlighten them.

The reporter having written up this remarkable case seems to have failed to embellish it as might have been easy to one of his expansive imagination. He might, for instance, have stated as a probable cause of this new growth, that the patient, like the PROPHET JOSHUA, "saw a tongue of gold and coveted it," and that the mental impression was so strong upon him that the new tongue immediately sprouted, or he might have said that MR. SENNER had been attending the theater, and become so affected by the words of the Fairy in "Midsummer Night's Dream:" "You spotted snakes with double tongue," sung in sweet soprano; or have been overcome by the deep bass of the tinsel DUKE OF YORK in "King Henry VI," shouting in staccato: "This knave's tongue begins to double," accompanied by a threatening gesture of the ducal sword.

It is apparent that our reportorial friend singularly failed in etiology. He has also left us doubtful whether MR. SENNER considers with JUVENAL that "the tongue is the vile slave's vilest part," and knows that he can never, never become a deacon, for according to TIMOTHY, "deacons must be grave and not double tongued," or whether MR. SENNER would rather have two tongues, so that he might on a Sunday twilight on a visit to his sweetheart, wag both tongues at once, and like ROMEO hear "how silver sweet sound lovers' tongues at night."

The reporter might also have indulged the play of his fancy by suggesting the treatment, and discuss whether, like CORIOLANUS, it were better to "pluck out the multitudinous tongue," and afterwards to supply its place according to the suggestion of AMBROISE PARÉ by the manufacture of an artificial tongue of wood, or whether he would accept it as an additional charm, and say with HESIOD that "the best treasure among men is a frugal tongue, and that which moves measurably, is hung with most grace."

HOW VALUE OF PROFESSIONAL SERVICES MAY BE PROVED.

In a suit to recover the value of professional services, witnesses of proper knowledge and experience may be called to give their opinions under oath as to the value of such services, says the Supreme Court of Colorado in the case of Bourke vs. Whiting, decided Oct. 2, 1893. But such opinions are not conclusive upon the jury; nor is it absolutely essential that expert evidence should be produced in such cases. The jurors have the right, when the nature and kind of services performed are shown in evidence, together with the time and circumstances of performance, to exercise their own judgment in determining the value of such services; and, if parties submit such an issue to the jury without expert testimony, they will not afterwards be heard in complaint.

A PERSONAL HYGIENIC EXHIBIT.

The most prominent feature of an exhibit in the Section of Hygiene in the Columbian Exposition, was that of a large photograph of the chief of the quarantine over which he presided. It is also admitted by certain newspapers, and as well by the modest individual himself, without the slightest effort to conceal the matter, that GEORGE FRANCIS TRAIN and himself are rivals in claiming credit for saving the World's Fair.

CORRESPONDENCE.

Minnesota State Board of Health and Vital Statistics.

OFFICE OF SECRETARY AND EXECUTIVE OFFICER,
RED WING, MINN., NOV. 6, 1893.

To the Editor:—I beg to report that a case of confluent smallpox has appeared in the person of a boy, Elmer Rogers, age 11, and unvaccinated, in the town of Featherstone, Goodhue County. He is a resident, and at the time of exposure was traveling from Virginia through Pennsylvania, Indiana, Ohio, Illinois to Minnesota, so that it is difficult to say where, in those States, he took the infection. I was called by the family Friday the 3d of November and found a well-marked case of confluent smallpox, the eruption having begun on Monday four days before. The attending doctor supposed the disease chickenpox. A careful list was made of all persons who had visited the family since the preceding Saturday. I visited, vaccinated and put under observation all who had been exposed since Sunday. There are four other members of the infected family whom I vaccinated with fluid lymph from our vaccine station. The house is roomy, isolated, and the patient well cared for.

I, to-day, vaccinate all who desire it, in that, and adjoining towns. Very respectfully,

CHARLES N. HEWITT, M.D.
Secretary and Executive Officer.

Personal Ethics for Visiting Foreigners.

To the Editor:—As Mr. Ernest Hart, editor of the *British Medical Journal*, has upon several occasions while in this country, delivered addresses on the code of medical ethics, would it not be in order for him to take up the subject of personal ethics? MEDICAS.

NECROLOGY.

Dr. Kerlin, Superintendent of the Pennsylvania Training School for Feeble Minded Children, died October 22.

Dr. Isaac Simpson Hughes.—Dr. Isaac Simpson Hughes died November 2, at Springfield, Ill., aged 49 years.

Dr. Eli J. Henkle of Baltimore, Md., died November 1, aged 53 years. He was in political life in the Maryland Legislature and in the Federal Congress during the greater part of twenty years. After leaving the Forty-fifth Congress he again entered upon the practice of medicine, becoming highly popular and successful.

Dr. William B. Towles.—Resolutions were adopted by the Medical Faculty of the University of Vermont at a special meeting held in New York, Oct. 26, 1893.

Dr. William B. Towles, late Professor of Anatomy in the Medical Department of the University of Vermont, died September 15.

The Medical Faculty, holding its first meeting since his decease at this time, and desiring to make some expression of its feeling with regard to this lamentable event, passed suitable resolutions.

Alfred Ludlow Carroll—In Memoriam.—The members of the Council of the New York State Medical Association deeply mourn the loss of their beloved, erudite, scholarly and gentle colleague, Alfred Ludlow Carroll, M.D., who has labored so well and so assiduously for the Association, for the profession and for the people, as a wise councilor, as the editor of the Association's Transactions, as a prolific contributor of scientific material, as a promotor of the honor, dignity, and advancement of medical science, and as one of the foremost sanitarians in the land.

The Council has therefore resolved that their high appreciation of the noble qualities and of the scientific accomplishments of their late gifted and lamented colleague be recorded in this volume of Transactions, and in the medical journals, and that a copy of the above be transmitted to the family of the deceased.

E. D. FERGUSON, M.D., Secretary.

Done by the Council, Nov. 4, 1893.

Dr. Affred Ludlow Carroll of New York City, died October 30, in his sixty-first year. He was a man of that fine fiber that finds its expression in artistic and literary labors. He was an early contributor of satirical bits of drawing for the weekly press, commonly touching on the foibles of society, and while yet a young practitioner served as editor of the *Medical Gazette*, from 1868 to 1871, an able weekly journal, but long since defunct. He studied medicine under the late Dr. Valentine Mott, and obtained his medical degree at the University Medical Department in 1855. He practiced in Staten Island from 1871 to 1889; his earlier and later years having been passed in New York City. He was among the sanitary pioneers of New York and an ardent supporter of the American Public Health Association. He was a charter member of his State Medical Association, contributing freely to its important discussions. His membership in the AMERICAN MEDICAL ASSOCIATION dates from 1880, since which time his face has been frequently seen and his voice heard at the annual conventions. He was health officer of Castleton, Staten Island, and for many years prominent in the management of the S. R. Smith Infirmary and Hospital. He was a corresponding member of the British Medical Association and many other important societies.

Dr. John Scott Taylor.—The death of Dr. John Scott Taylor, which occurred on the first of October, 1893, recalls one of the saddest life histories in the medical profession. Gifted by nature with a kind heart and active brain, he commenced his life work with unusual promise, and before the shadow came that darkened forever his career among men, had done duty that placed him high in the esteem of those who knew him.

A Scotchman by birth, an adopted son of this country, he served during the entire war of the Rebellion successively as Post Surgeon, Medical Director, and Chief Operator of his Division, and gained high testimonials from official sources.

He graduated at Lind University before the war, and after its close he returned to Chicago to establish his home. But his health had suffered during those four active years, and despite the efforts of his friends and physicians, Drs. Byford and Patterson, now dead also, his mind gave way. He lingered twenty-four years in an insane asylum, having outlived his associates only to die there.

He leaves an estimable widow and a talented son to mourn with us his loss to the world. H. T. B.

Sir Andrew Clarke Passes Away.—LONDON, NOV. 6.—Sir Andrew Clarke, the well-known physician, died at 4:30 o'clock this afternoon. He suffered a stroke of paralysis several weeks ago.

Sir Andrew Clarke, Bart, M.D., was born Oct. 28, 1826. He was educated first at Aberdeen and afterwards at Edinburgh. For two years he assisted Dr. Hughes Bennett in the Pathological Department of the Royal Infirmary and was Demonstrator of Anatomy to Dr. Robert Knox in the final course of lectures delivered by that celebrated anatomist. For four years Dr. Clarke had charge of the Pathological

Department of the Royal Naval Hospital at Haslar, where he delivered lectures on the use of the microscope in practical medicine. In 1854 he took his degree of M.D. at the University of Aberdeen, settled in the metropolis, became a member of the Royal College of Physicians of London, and was elected on the staff of the London Hospital. In 1858 Dr. Clarke was made a Fellow of the College of Physicians, in which he held the offices of Croonian and Lumelian Lecturer, Counselor and Examiner in Medicine and Censor. He had been also Lettsomian Lecturer and President of the Medical Society of London. Dr. Clarke originally intended to devote himself exclusively to the cultivation of pathology, but turned by the force of circumstances from the course on which he had entered he was long occupied in the work of a practical physician. He was the author of numerous essays, lectures and reviews, the professional portion of which refers for the most part to diseases of the respiratory, renal, and digestive organs. He was created a Baronet in 1883. He was senior physician and lecturer on clinical medicine to the London Hospital; an F. R. S., and LL.D. of Edinburgh and Aberdeen (causâ honoris), and consulting physician to the East London Hospital for Diseases of Children. He held the offices of President of the Metropolitan Counties Branch of the British Medical Association and President of the Clinical Society. Dr. Clarke was Mr. Gladstone's physician, and much speculation has been indulged as to the effect of his death on the Premier's health.—*Press Dispatch.*

ASSOCIATION NEWS.

Change of Date of Meeting.—Official Notice.—In order to enable the State Medical Societies to send instructions as to their action upon the matter referred to them by the AMERICAN MEDICAL ASSOCIATION at its recent meeting at Milwaukee, and for other reasons, the time of meeting of the ASSOCIATION at San Francisco, has been changed from the first Tuesday in May to the first Tuesday in June, 1894.

WILLIAM B. ATKINSON, Permanent Secretary. JAS. F. HIBBERD, President-Elect.

How can it be Accomplished?—It is not only feasible but possible that the AMERICAN MEDICAL ASSOCIATION should in the near future be the grand central organization of the medical profession of the United States, and yield an influence that only a central body can, even as much as the British Medical Association does in Great Britain.

There are too many societies under big sounding titles, which ought to be consolidated under some of the various sections of the AMERICAN MEDICAL ASSOCIATION. We can not and do not believe that the medical profession, as a mass, want a half dozen national societies, for by so doing, all lose influence and power, not only in the profession but out of it. It seems to us that the members of the AMERICAN MEDICAL ASSOCIATION are not active enough in doing missionary work in this direction among the members of the profession outside of this ASSOCIATION's limits. If an earnest effort were made in this direction we feel confident that a different feeling would be created, and a wider sphere of usefulness would be opened to the only real national medical association of the United States.—*New England Medical Monthly.*

SOCIETY NEWS.

Executive Committee of the Congress of American Physicians and Surgeons.—A meeting of the Executive Committee of the Congress of American Physicians and Surgeons was recently held at the house of the Chairman, Dr. Landon Carter Gray, there being present Dr. A. L. Loomis, President of the Congress; Dr. H. P. Bowditch, representing the Physiological Association; Dr. D. B. St. John Roosa, of the Ophthalmological Association; Dr. Abram Jacobi of the Pediatric Association; Dr. P. A. Morrow, of the Dermatological Association; Dr. Jas. B. Walker of the Climatological Association; Dr. R. W. Taylor of the Genito-Urinary Association; Dr. W. T. Lusk of the Gynecological Association; Dr. F. J. Shepherd of the Association of American Anatomists; Dr. L. McLane Tiffany of the American Surgical Association; Dr. Wm. H. Welch of the Association of American Physicians, and Dr. Landon Carter Gray of the American Neurological Association. A local Committee of Arrangements in Washington was appointed as follows:

Dr. S. S. Adams, (Chairman) representing the Pediatric Association; Dr. John S. Billings, the Surgical Association; Dr. H. C. Beyer, the Physiological Association; Dr. S. O. Ritchie, the Otological Association; Dr. S. C. Busey, the Gynecological Association; Dr. W. W. Johnson, the Climatological Association; Dr. J. Atkinson, (Baltimore) the Dermatological Association; Dr. Wm. H. Welch, (Baltimore) the Association of Physicians; Dr. I. C. Rosse, the Neurological Association; Dr. Samuel Theobald, the Ophthalmological Association; Dr. D. W. Prentiss, the Genito-Urinary Association; Dr. Frank Baker the Anatomical Association.

It was arranged that the following subjects should be discussed by the Congress at its next meeting in Washington in the latter part of May, 1894:

The Climatological Association: "Sewer Gas;" Genito-Urinary Association: "The Surgical Kidney in its Clinical Aspects;" Dermatological Association: "Leprosy in the United States;" Laryngological Association: "Intra-Nasal Surgery;" Gynecological Association; "Conservative Treatment of the Female Pelvic Organs; Neurological Association: "The Effects of Infectious Processes on the Nervous System."

One Association is yet to select a subject for discussion.

Dr. W. H. Carmalt, of New Haven, Conn., resigned from the sub-committee deputed to take charge of the organization of the Congress, and Dr. Wm. H. Welch of Baltimore, was appointed in his place, so that the committee now consists of Dr. A. L. Loomis, President of the Congress; Dr. Landon Carter Gray, Chairman of the Executive Committee; Dr. Newton M. Shaffer, Secretary of the Executive Committee, and Dr. Wm. H. Welch.

Centennial Medical Report.—At the centennial meeting of the Hartford County Medical Association, held in Hartford in 1892, Drs. John B. Lewis, Gideon C. Segur and Joseph E. Root were appointed a committee to prepare and publish a report of the centennial meeting and a catalogue of all past and present members of the Association. The members of the committee have worked long and faithfully, and the tangible result of their labors appears in the handsome volume of 160 pages just issued. The volume is beautifully bound in white and green, and illustrated with eight or ten handsomely engraved portraits. The frontispiece is a portrait of Dr. George Oliver Sumner of Glastonbury, who became a member of the Association in 1833. After the full and accurate report of all speeches and papers at the centennial meeting, which contains much valuable historical matter, the feature of the volume is the catalogue of names. The committee has succeeded in obtaining the full name of every physician who was ever a member of the society. As the history of the society extends back over a hundred years, this was sometimes no easy task, and town records had frequently to be searched. The volume will form a valuable souvenir.—*Hartford* (Conn.) *Times.*

International Congress of Public Health.—At the meeting of the International Congress of Public Health, held under the auspices of the American Public Health Association and the World's Congress Auxiliary of the World's Columbian Exposition, at Chicago, Oct. 10-14, 1893, the following resolutions were adopted:

Offered by Dr. J. E. Monjarás of Mexico:

Resolved, 1. That the educational authorities of the various nations represented here be requested to devote a longer

time than they now do, in their curriculum, to the teaching of hygiene.

2. That the governments of the countries represented at this Congress be urged to appoint to sanitary positions and commissions only such persons as may have acquired a special education in sanitary studies.

Offered by Dr. Benjamin Lee of Pennsylvania:

Resolved, That the International Congress of Public Health affirms in the strongest possible manner its confidence in the value of vaccination as a preventative of smallpox.

Offered by Mr. Henry Lomb of Rochester, N. Y.:

Resolved, 1. That this Congress urge upon the people of the countries here represented, the importance of completing our sanitary organization by forming voluntary Public Health Associations, to study for themselves the conditions of healthy living in the home and the community, and to afford efficient and persistent support to the work of public health officials.

2. That this Congress respectfully ask State and local Boards of Health to assist in all proper ways the formation of such organizations. IRVING A WATSON, Secretary.

CONCORD, N. H., Oct. 25, 1893.

American Public Health Association.—At the annual meeting of the American Public Health Association, held at Chicago Oct. 9-14, 1893, the following resolution offered by Dr. Henry P. Walcott of Massachusetts, was adopted:

Resolved, That the American Public Health Association again urge upon Congress the necessity of the appointment of some officer with general sanitary authority in connection with the National Government.

That the functions of such an authority are of sufficient importance to demand the exclusive attention of the best instructed sanitarian.

That such authority should be enabled, from time to time and under proper regulations, to secure the advice and coöperation of State Boards of Health.

IRVING A. WATSON, Secretary.

SECRETARY'S OFFICE, CONCORD, N. H., Oct. 25, 1893.

Union Medical Association.—The eighty-ninth quarterly session of this Association will be held in Hollenden Hotel, Cleveland, Ohio, Tuesday, Nov. 14, 1893.

The program is as follows: Lecture, "Pathology and Treatment of Injuries of the Pelvic Floor," Dr. F. D. Brandenburgh; Essay, "The Doctor—The Surgeon," Dr. J. V. Cleaver; Essay, "The Eye Symptoms of Brain Disease," Dr. R. D. Gibson; Lecture, "The Significance of Glycosuria," Dr. E. J. March. Reports of cases will be given by Drs. W. E. Wirt, C. S. Leonard, A. C. Brant, P. Max Forshay, E. O. Portman, T. W. Johnson, Geo. S. Peck, T. H. Landor, Edward Prebel, H. E. Whelan.

Topic for discussion, "How shall the requirements of aseptic and antiseptic methods be carried out in general midwifery practice?" Discussion will be opened by Dr. T. Clarke Miller; alternate, Dr. L. S. Ebright.

A. B. WALKER, M.D., President.
W. W. LEONARD, M.D., Secretary.

University of Georgia.—The Medical Department of the University of Georgia is against the abolishment of the Board of Medical Examiners by the State Legislature, and make an earnest appeal that it be reëstablished. The professors of the Medical College adopted the following resolutions:

WHEREAS, It is an indisputable fact that since the Board of Medical Examiners of Georgia was abolished by act of the Legislature, Georgia has been a veritable paradise for quacks who have been driven out of other States,

Resolved, That the Faculty of the Medical Department of the University of Georgia heartily indorses the principal features of the bill as printed in the *Atlanta Medical and Surgical Journal*, December, 1893, pages 612, 613 and 614, captioned, "A Bill to Be Entitled an Act to Establish a Board of Medical Examiners for the State of Georgia, and to Protect the People from Illegal and Unqualified Practitioners of Medicine," which bill was passed by the Senate of Georgia at its last session.

Resolved, That a committee of three members of this Faculty be appointed and charged with the duty of appearing before the Legislature of Georgia and using all honorable means to secure the enactment of said bill.

Resolved, That this Faculty, through the said committee, requests the Senator from this Senatorial district, and the Representatives of the Lower House from this county, to exert themselves to secure the passage of said bill.

Resolved, That this College points with pride to the fact that it was the first medical school in America to insist upon the necessity of higher medical education in the colleges of the United States. This fact is shown first, by the record that in 1825 the first Board of State Medical Examiners was organized at the request of the Board of Trustees of this College; second, in the early history of this College the term was six months. In 1845 the Faculty of this College attempted to have all medical colleges in America require of their students attendance on two full courses of six months each, as a requisite to graduation. This Medical School only receded from its then advanced position, because forced to do so by refusal of all other colleges to join in the movement, no other college having expressed a willingness to join in the crusade against the disgraceful practice of yearly graduating large numbers of ignorant and unqualified medical students.

Resolved, That it is, in the opinion of this Faculty, a blot upon the escutcheon of the State, to permit Georgia to be without a Board of Medical Examiners to protect her citizens against medical pretenders.

Southern Surgical and Gynecological Association.—Sixth annual meeting will be held in New Orleans, La., Nov. 14, 15 and 16, 1893.

TUESDAY, NOVEMBER 14—MORNING SESSION.

Address of Welcome and Response.

Memorial Address on Dr. Ephraim McDowell, L. S. McMurtry, M.D., Louisville, Ky.

Diagnosis of Pelvic Inflammatory Diseases, Howard A. Kelly, M.D., Baltimore, Md.

The Treatment of Pyo-Salpynx, Cornelius Kollock, M.D., Cheraw, S. C.

The Incision in Abdominal Section—How to Close it—Post-Operative Complications About it, Joseph Price, M.D., Philadelphia, Pa.

Etiology and Treatment of Post-Operative Ventral Hernia, Chas. A. L. Reed, M.D., Cincinnati, Ohio.

The Vaginal Method as Compared with the Abdominal in Operations on the Uterus and its Appendages, Geo. J. Engelmann, M.D., St. Louis, Mo.

The Best Time to Operate in Appendicitis, A. M. Cartledge, M.D., Louisville, Ky.

An Extra-Peritoneal Method of Operating in Certain Cases of Appendicitis, Bacon Saunders, M.D., Ft. Worth, Texas.

AFTERNOON SESSION.

Intra-Cranial Neurectomy and Removal of the Gasserian Ganglion, with Report of Cases, Louis McLane Tiffany, M.D., Baltimore, Md.

Contusion of the Brain, J. B. Murfree, M.D., Murfreesboro, Tenn.

Trephining as a Cure for Traumatic Epilepsy, Jno. T. Chapman, M.D., Bessemer, Ala.

Some Remarks on the Treatment of Epilepsy, B. E. Hadra, M.D., Galveston, Texas.

A Contribution to the Study of the Prostate, G. Frank Lydston, M.D., Chicago, Ill.

The Management of the Epicystic Fistula in Cases of Enlarged Prostate, J. D. S. Davis, M.D., Birmingham, Ala.

Choice of Operations for Stone in the Urinary Bladder, W. T. Briggs, M.D., Nashville, Tenn.

Supra-Pubic Cystotomy, B. W. Taylor, M.D., Columbia, S. C.

WEDNESDAY, NOVEMBER 15—MORNING SESSION.

Conditions Modifying the Prognosis in Gunshot Wounds of the Abdomen, A. B. Miles, M.D., New Orleans, La.

Treatment of Gunshot Wounds, with Report of Cases, W. F. Westmoreland, M.D., Atlanta, Ga.

How to Deal with Gunshot Wounds Safely Without Delay, W. L. Robinson, M.D., Danville, Va.

Laparotomy in General Surgery—Report of Twenty-two Cases, W. B. Rogers, M.D., Memphis, Tenn.

Celiotomy, with Report of Cases, W. H. Wathen, M.D., Louisville, Ky.

Hypertrophy of the Omentum in Hernia, with Specimen, G. A. Baxter, M.D., Chattanooga, Tenn.

Wyeth's Bloodless Method in Amputation at Hip, F. W. Parham, M.D., New Orleans, La.

AFTERNOON SESSION.

The President's Annual Address: The Southern Surgical and Gynecological Association; Its Origin, Objects and Aims, Bedford Brown, M.D., Alexandria, Va.

Cancer; Its Etiology and Treatment, W. L. Rodman, M.D., Louisville, Ky.

Operative Procedures for Carcinomatous Tumors of the Breast, J. McFadden Gaston, M.D. Atlanta, Ga.

Wounds of the Bladder, their Recognition and Management, Richard Douglas, M.D., Nashville, Tenn.

Fibroid Tumors Complicated with Pregnancy, W. D. Haggard, M.D., Nashville, Tenn.

The Diagnosis of Some Abdominal Tumors Supposed to be Ovarian, Jas. Goggans, M.D., Alexander City, Ala.

THURSDAY, NOVEMBER 16.—MORNING SESSION.

Rhinoplastic Operations, W. S. Elkin, M.D., Atlanta, Ga.

Sarcomata of the Peripheral Nerves, with Report of a Case, W. O. Roberts, M.D., Louisville, Ky.

Division of the Cervix Uteri, H. P. C. Wilson, M.D. Baltimore, M. D.

Some Experiments with the Galvanic Current on the Endometrium, H. Berlin, M.D., Chattanooga, Tenn.

A Combination of Carbolic Acid and Camphor as an Antiseptic, Wm. Perrin Nicolson, M.D., Atlanta, Ga.

A Case of Popliteal Aneurism, R. M. Cunningham, M.D., Pratt City, Ala.

The Present Status of Ureteral Surgery, Arch. Dixon, M. D., Henderson, Ky.

Operative Procedures for Calculi in the Pelvis of the Kidney, W. E. B. Davis, M.D., Birmingham, Ala.

AFTERNOON SESSION.

Two Unique Cases in Abdominal Surgery and Obstetrics, J. P. Moore, M.D., Macon, Ga.

Four Cases of Hysterectomy by Baer's Method, Jos. Taber Johnson, M.D., Washington, D. C.

Placenta Previa, George Ross, M.D., Richmond, Va.

Some Interesting Cases from Surgical Practice, F. W. Parham, New Orleans, La.

Report of Surgical Cases, Wm. H. H. Cobb, M.D., Goldsboro, N. C.

Treatment of Stone in the Ductus Communis Choledocus, Wm. E. B. Davis, M.D., Birmingham, Ala.

MISCELLANY.

Dr. Franklin W. Hayes has been appointed a member of the Indianapolis Board of Health, by the Mayor of that city.

Emergency Hospital at World's Fair.—There were treated at the World's Fair Emergency Hospital, 18,500 cases, and there were twenty-three deaths at the institution.

New Dental College.—Tacoma, Wash., has a new dental college, which has been organized with a faculty of nine professors and four special lecturers. It will give a three years' course to conform to the rules of the National Association of Dental Faculties.

The Pacific Medical Record of Portland, Ore., is rapidly gaining the support of the medical profession of the Pacific Northwest. It is published as a local journal only, and is not yet one year old, but it has already been indorsed by five State Medical Societies. It is a stanch supporter of the AMERICAN MEDICAL ASSOCIATION, and will lend its influence towards increasing the membership and interest in that organization on the Pacific coast.

Doctors' Bills as Debts of Honor.—Strange as it may seem, doctors' bills are said to be classed as debts of honor in Austria, China and Sweden. They are therefore in those countries left, as gambling debts are here, so far as the law is concerned, to be paid or not, according to the inclination of those incurring them. So in England, unless the law has been very recently changed, a *physician* (or one licensed by the College of Physicians) has no remedy at law for his services, but his employment is wholly honorary, though a "medical practitioner," whose legal appellation is usually "apothecary," has. Indeed, it has there even been held that a physician, who prepared or dispensed his own medicines could not recover for them, although they were furnished to his own patients. This may not, however, be entirely a disadvantage, because it is well known that such obligations are frequently paid where legal debts could not be collected.

A New Water Filter for Troops.—Recent advices from Vienna speak of a water filter, the invention of a staff officer of the Austro-Hungarian army, which after thorough trial by the Sanitary Committee of the War Office has been adopted and issued to the army. Of these filters 12,000 are now in use by the troops at the corps maneuvers in Galicia, and are reported as being perfectly satisfactory. The filter is made in two sizes; one the dimensions of the cavalry water bucket, the other smaller. It contains two wire sieves; one resting upon the bottom of the bucket and the other suspended midway between the top and bottom. A handful of asbestos is placed upon the lower sieve, and the bucket is hung over a cask or any suitable receiving vessel. The water is said to pass through the filter perfectly clear, odorless and suitable for drinking, the pulpy asbestos absorbing the organic matter. The upper sieve is intended to remove the coarser particles from the water, such as gravel, weeds, insects, etc; the lower sieve to hold the asbestos. The latter can be washed and cleaned by hand and used a number of times. The smaller filters are constructed on the same principles. Each consists of a round piece of canvas of the size of a dinner plate, provided with a string around the edge to draw it to an orifice and hold a cup-shaped tin funnel. The funnel contains two sieves and when it is to be used a small piece of asbestos of the size and double the thickness of a silver half-dollar, is placed upon the lower sieve.

The Imperious City Druggist.—A writer in the *New York Herald* communicates the following pen picture of the lordly drug clerk and his ways of "just as good" substitution:

"It requires some nerve and the display of an acute presence of mind to enter a drug store and inquire for a particular thing and to take no other thing in place of it. Nobody understands better than the average drug clerk the feeble character of the human will, and nobody than he better appreciates his own superior position. If I should go into an eating house and want frogs' legs and no frogs' legs were to be had there, nothing would be thought of the circumstance if I should move on to some other place for what I wanted. Nobody would call out the rest of the force to stare at me. Nobody would tell me I really didn't mean frogs' legs, but wanted to get a wholly different thing. Nobody would sneeringly remark that they never heard of such a thing, that it wasn't down on the bill of fare printed for their house, and therefore frogs' legs were not in the market. Nobody would, when I told them that I had seen frogs' legs in another restaurant, not far away, insinuate that I was mistaken or was lying. Not at all. They would merely permit me to go away and hunt up my frogs' legs and enjoy them wherever I might find them.

"The average drug clerk is a very different sort of an individual to deal with. Not to be too sweeping in this remark let me say some of these licensed practitioners on the public credulity are a trifle too smart for common everyday mundane affairs. I have had them not only subject me to all of the above conditions, but absolutely go so far as to further relieve me from the strain of thinking to the extent of putting up something unasked for and by them pronounced just as good or better. And I never found that peculiar method of doing business in all my varied dealings with my other fellow men. There is food for philosophical reflection in this. Now it is said that certain patent medicine firms of a competitive character offer pecuniary inducements to dealers for pushing goods on the market, and this will account for some of the peculiarities of the business, but it will not account for all of them. Only the all-seeing One who graciously stands between us and morphin put up as seidlitz powders can do that."

The Maryland Medical Association will meet at Annapolis November 21 and 22. The Society will probably meet in the Senate chamber, as the Legislature is not in session.

Wants $50,000.—Dr. W. R. Amick, of consumptive cure notoriety, has sued Dr. J. C. Culbertson for $50,000 damages for terming him a quack. Dr. Culberison is both plucky and lucky.

To Reach the Doctors.—The publishers of the *Medical News* a Philadelphia weekly issued at $4.00 a year, will shortly mail a copy of that publication to every physician in the United States and Canada, about 110,000 in all. The publishers in their announcement say:

"We not pretend to send out this large issue in the interests of our advertisers. We publish a majority of the textbooks used in the various colleges, and every practitioner's library is also largely made up from our publications.

"It is in order to place a catalogue of these books in the hands of the medical profession that we make this wide distribution, and, consequently, *we are ourselves by far the largest advertisers.* No guarantee of the above statement as to circulation could be so strong as this fact.

"Another important object to be gained is to obtain additional subscribers to the *News*, a matter in which our advertisers have a keen interest."

On presenting this announcement at the New York postoffice, *Printers' Ink* was informed that if such an edition was offered here it would be held, subject to the decision of the Third Assistant Postmaster General at Washington. Being a Philadelphia publication, it is possible that the *News* has a permit entitling it to special privileges.

It used to be supposed that what may and may not be mailed at second-class rates was fixed by law, but, under date of Feb. 1, 1893, Hon. James F. Tyner, Assistant Attorney General, assigned to duty at the Postoffice Department, said:

"Heretofore, and until within a few months past, this office considered and gave opinions upon such cases as were referred to it by the Third Assistant, and in which he assumed there were questions of law. *By the present practice, no questions in connection with publications of this class are referred to this office, for the reason that it has been held that all such questions are questions of fact and not of law.*"

It has been made to appear that, under Mr. Wanamaker's administration, valuable postal privileges were enjoyed by some persons, while others sometimes claimed that even their rights were not assured.—*Printers' Ink.*

New York Quarantine Methods.—The following report on New York quarantine methods appears in the *Savannah News* of October 17:

"The Norwegian steamship, *Lyderhorn*, which arrived up Sunday night, was sent back down to quarantine by Health Officer Brunner yesterday morning for disinfection.

"The reason for this order of the health officer was a letter received from the inspector of the marine hospital service at New York, containing a copy of a report upon the vessel by the inspector to the surgeon general at Washington. The information was sent to Savannah by order of the surgeon general.

"The case of the *Lyderhorn* places the management of the quarantine service at the port of New York in a very bad light. The letter received by Dr. Brunner was from Dr. J. J. Kinyoun, Inspector of the Marine Hospital Service at the port of New York. He enclosed a copy of a report made to the Surgeon General, which he had been ordered to send to Dr. Brunner. Dr. Kinyoun's report to the Surgeon General was as follows:

United States Marine Hospital Service, Middle Atlantic District, Port of New York, Surgeon General's Office, Oct. 23, 1893.

Sir:—I have the honor to report that a steamer called the *Lyderhorn* from Sourabya, Java, with a cargo of sugar, arrived in New York on September 30. On October 10 the vessel came down to the New York quarantine with the request from the agents, Funch, Edye & Co. to have the vessel thoroughly disinfected in order that there would be no detention at the Savannah quarantine. I feel it my duty to inform you what the process of disinfection was and what was done for the vessel. The vessel was empty, one compartment containing considerable dunnage.

The hatches were opened and a bucket containing about two pounds of a mixture of manganese dioxid and salt, moistened with water, was made ready to lower in each compartment. Then sulphuric acid was poured over this mixture, and the bucket lowered into each compartment. The disinfection, so-called, was accomplished within twenty minutes, after which the vessel proceeded to sea. About ten pounds of the mixture was used. No disinfection of the apartments of the crew or cabin; in fact, while the alleged disinfection was going on some of the men were at their breakfast in the forecastle.

The health officer gave a certificate that the vessel had been thoroughly disinfected. The fee charged for this was $10.00. Very respectfully. "J. J. KINYOUN,

"P. A. Surgeon, M. H. S. Inspector."

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from October 27, 1893, to November 3, 1893.

Lieut. Col. JOHNSON V. D. MIDDLETON, Deputy Surgeon General U. S. A., leave of absence granted is extended fifteen days.

Major CURTIS E. MUNN, Surgeon U. S. A., is hereby granted leave of absence for one month, with permission to apply for an extension of two months.

Major JOHN O. SKINNER, Surgeon U. S. A. having been found incapacitated for active service on account of disability incident to the service, is by direction of the President, retired from active service this date, Oct. 26, 1893, under the provisions of Section 1251, Revised Statutes.

First Lieut. CHARLES LYNCH, Asst. Surgeon, is relieved from duty at Ft. Omaha, Neb., and ordered to Ft. Robinson, Neb., for duty at that station, relieving Capt. EDWARD EVERTS, Asst. Surgeon. Capt. EVERTS, on being relieved by Lieut. LYNCH, is ordered to Whipple Bks., Ariz., for duty, relieving Major BENJAMIN F. POPE, Surgeon. Major POPE, on being relieved by Capt. EVERTS, is ordered to Angel Island, Cal., for duty, relieving Capt. WILLIAM R. HALL, Asst. Surgeon. Capt. HALL, on being relieved by Major POPE, will report for duty as attending surgeon, Hdqrs. Dept. of California, and examiner of recruits at San Francisco, Cal.

Lieut. Col. HENRY R. TILTON, Deputy Surgeon General, is relieved from duty at Ft. Wayne Mich., and ordered to Ft. Omaha, Neb., for duty at that post.

Major LOUIS M. MAUS, Surgeon, is relieved from duty at Whipple Bks., Ariz., and ordered to Ft. Sam Houston, Texas, for duty, relieving Major CALVIN DEWITT, Surgeon. Major DEWITT, on being relieved by Major MAUS, ordered to Ft. Leavenworth, Kan., for duty, relieving Major JOHN BROOKE, Surgeon. Major BROOKE, on being relieved by Major DEWITT, ordered to Philadelphia, Pa., to await orders.

Capt. MARLBOROUGH C. WYETH, Asst. Surgeon, is relieved from duty at Ft. Supply, Ind. Ter., and ordered to Army and Navy General Hospital, Hot Springs, Ark., for duty.

Capt. ROBERT B. BENHAM, Asst. Surgeon, having relinquished unexpired portion of sick leave, is ordered to Madison Bks., N. Y., for duty.

First Lieut. HARRY M. HALLOCK, Asst. Surgeon, is relieved from duty at Ft. McPherson, Ga., and ordered to Ft. Bayard, N. M., for duty, relieving First Lieut. PHILIP G. WALES, Asst. Surgeon. First Lieut. WALES, on being relieved by Lieut. HALLOCK, is ordered to Ft. McPherson, Ga., for duty.

Capt. H. P. BIRMINGHAM, Asst. Surgeon, leave of absence granted is extended three days.

LETTERS RECEIVED.

(A) American Medico-Surgical Bulletin, New York, N. Y.; Antikamnia Chemical Co., (2) St. Louis, Mo.; Atkins, E. C., Colorado Springs, Col.; Armstrong, S. T., New York, N. Y.; (B) Brayton, S. H., Evanston, Ill.; Brayton, P. B., Syracuse, N. Y.; Boylan, J. E., Cincinnati; Bettman, Boerne, Chicago, Ill.; Bulkley, L. Duncan, New York, N. Y.; Breedlove, J. W., Ft. Smith, Ark.; Brown, M. R., Chicago; (C) Culhane, T. H., Rockford, Ill.; Chaille, S. F., New Orleans, La.; Craig, J. W., Mansfield, Ohio; Craig, C. G., Rock Island, Ill.; Cory, A. L., Chicago, Ill.; Clark, J. E., Medford, Mass.; Carson, W. J., Chicago, Ill.; Craven, S. Belle, Toledo, Ohio; Chapman, B., Copley, Ohio; (D) Dulin, W. E., Washington, D. C.; Dohrber-Goodale & Co., Boston, Mass.; Dutton, C. F., Cleveland, Ohio; Dunglison, R. J., (3) Philadelphia, Pa.; (E) Eastman, Joseph, Indianapolis, Ind.; Eyster, Geo. L., Rock Island, Ill.; Ellegood, Robt. Delmar, Del.; (G) Garlock, C. L., Ann Arbor, Mich.; Greenly, T. B., Meadwin Lawn, Ky.; Goelet, A. H., New York, N. Y.; Gray, Landon Carter, New York City; (H) Hart, Ernest, London; Hamburg-American Packet Co., New York, N. Y.; Hibberd, Jas. F., Richmond, Ind.; Hummel & Parmele, Philadelphia, Pa.; (J) Judson, A. B., New York City; Jackson, T. B., Unionville, Mo.; (L) LaGarde, Louis A., U. S. A.; Longmans, Green & Co., New York, N. Y.; Lincoln, D. F., Geneva, N. Y.; Loeb, H. W., St. Louis, Mo.; Launners, B. J., Louisville, Ky.; (M) Mathews, J. M., Louisville, Ky.; Morgan, James D., Washington, D. C.; McGraw, T. A., Detroit, Mich.; McGillicuddy, T. J., New York, N. Y.; Mully, A. J., St. Louis, Mo.; Marcy, H. O., Boston, Mass.; McMurtry, L. S., Louisville, Ky.; Montgomery, E. E., Philadelphia, Pa.; (N) Neely, F. T., Chicago, Ill.; Neier, O. C., New Palestine, Ind.; (O) Owen, W. C., Newburg, Mo.; Orum, Julia A., Philadelphia.; (P) Peterson, F., New York, N. Y.; Proctor & Gamble, Cincinnati, Ohio; Park, J. W., Hainsburg, Pa.; Peacock Chemical Co., St. Louis, Mo.; (R) Reeves, Jas. E., Chattanooga, Tenn.; Rebman, F. J., London, Eng.; Reinhard, Carl, Milwaukee, Wis.; Reed & Camrick, New York, N. Y.; Renz & Henry, Louisville, Ky.; (S) Smith, Frank Trester, (2) Chattanooga, Tenn.; Smith, Jos. R., New York Harbor, N. Y.; Scott, D. H., Chillicothe, Ohio; Stanton, B., Cincinnati, Ohio; Stokes, W. B., Coldwater, Ky.; Still, D. O., Johnstown, N. Y.; Stockwell, C. M. & C. B., Port Huron, Mich.; (T) Trommer Extract of Malt Co., Fremont, Ohio; (W) Wilder, W. H., Chicago, Ill.; Würdemann, H. V., Milwaukee, Wis.; White Jos. A., (2) Richmond, Va.; Watson, Irving A., Concord, N. H.; Wyckoff, R. M., Brooklyn, N. Y.